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ABSTRACT

Purposes of this study were to detect some of the sociocultural differences between Mexican American and Anglo junior high school students; to determine how the sociocultural characteristics of the Mexican American students were related to their language background; and to ascertain how characteristics of both groups were related to their achievement. The sample consisted of 126 male and female students, 87 of whom were Mexican American. Scales were developed from questionnaire and interview data to measure language background, self-concept of ability, achievement orientation, parental independence training practices, parental achievement pressure, social distance, and socioeconomic status. Student achievement was measured both by English and mathematics grades and by standardized tests. Observed sociocultural differences between Mexican American and Anglo students appeared to be due to ethnic backgrounds and socioeconomic and other social conditions associated with this background. Mexican American students exhibited many cf the characteristics of the culture of poverty described by Oscar Lewis. Part of the depressed achievement of Mexican Americans, when compared to Anglo students, can be attributed to their lower self-concepts of ability; fatalistic, present-time orientation; non-democratic independence training experiences; and high religious social distance. (Author/LS)

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A STUDY OF SOCIOCULTURAL CHARACTERISTICS OF MEXICAN-AMERICAN AND ANGLO JUNIOR HIGH SCHOOL STUDENTS AND THE RELATION OF THESE CHARACTERISTICS TO ACHIEVEMENT

BY

FRANCIS BENJAMIN EVANS, B.F.A., M.A.

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VITA

Francis Benjamin Evans was born March 15, 1935 in Edgerton, Missouri. He received most of elementary and secondary education in Albuquerque, New Mexico, and graduated from Albuquerque High School in June, 1952.

He received part of his undergraduate training at New Mexico State University. He then transfered to the University of New Mexico, Albuquerque, New Mexico, where he received his Bachelor of Fine Arts degree in Music Education in June, 1958.

The writer spent four years teaching in public schools on or near the Navajo Indian Reservation, and was an Instructor for the Navajo Rehabilitation Project during the 1965-1966 academic year at Northern Arizona University, Flagstaff, Arizona. He received his Master of Arts degree in Elementary Education from this institution May, 1966.

From September, 1966 to August, 1969 the writer was a research fellow in the Educational Research Training Program, Department of Educational Administration, New Mexico State University.

ABSTRACT

The purposes of this study were to detect some of the sociocultural differences between Mexican-American and Anglo junior high school students; to determine how the sociocultural characteristics of the Mexican-American students were related to their language background; and to ascertain how the characteristics of both groups of students were related to their achievement.

The sample consisted of 126 male and female junior high school students, 87 of whom were Mexican-American. Scales were developed from questionnaire and interview data to measure the following sociocultural characteristics: (1) language background, (2) self-concept of ability, (3) achievement orientation, (4) parental independence training practices, (5) parental achievement pressure, (6) social distance, and (7) socioeconomic status. Student achievement was measured by English and mathematics grades, Iowa Test of Basic Skills, Language Skills and Arithmetic Skills scores , and Non-Language Intelligence test scores from the California Short-Form Test of Mental Maturity.

I. FINDINGS

Sociocultural Differences Among Mexican-American and Anglo Students

Analyses of variance indicated that Mexican-American students, regardless of the amount of English spoken in the home, when compared to Anglo students, (1) came from families of much lower socioeconomic status; (2) had lower self-concepts of ability; (3) had fatalistic, present-time orientations; (4) had a passive, accepting attitude toward life; (5) had a high striving orientation; (6) experienced less democratic parental independence training practices; and (7) had high religious social distance. In addition, Mexican-American students from families using mostly English experienced higher parental pressure to complete high school than did other Mexican-American students.

A correlational analysis revealed the following interrelations among language background, socioeconomic status and the sociocultural characteristics of the Mexican-American students. An English-speaking background was significantly associated with higher socioeconomic status, more parental assistance with schoolwork, and high parental pressure to complete high school. The last two relations were true regardless of socioeconomic status. Higher socioeconomic status on the part of

Mexican-American students was associated with more parental assistance with schoolwork, democratic parental independence training practices, high parental pressure to get good grades, and low religious social distance. These last three relations were independent of language background.

Relation of Sociocultural Characteristics to Achievement

Among Mexican-American students, the following characteristics were significantly associated with high achievement for at least three of the five achievement measures: (1) high self-concept of ability; (2) democratic parental independence training practices; (3) an activistic, future-time orientation; and (4) low religious social distance.

Among Anglo students, the following characteristics were significantly associated with high achievement on at least three of the five achievement measures: (1) high self-concept of ability; (2) low religious social distance; and (3) high parental pressure to complete high school.

Stepwise linear regression analyses, computed separately for Anglo and Mexican-American students, indicated that self-concept of ability was the best single predictor of achievement for both groups of students. For

Mexican-American students, the most consistent predictors of high achievement were high self-concept of ability, democratic parental independence training, high parental pressure to complete high school and low religious social distance. For Anglo students, self-concept of ability was the only predictor contributing significantly to three or more equations. The regression equations for the Mexican-American students accounted for a median of 29 per cent of the variation in their achievement; whereas the regression equations for the Anglo students accounted for a median of 47 per cent of the variation in their achievement.

II. CONCLUSIONS

The observed sociocultural differences between Mexican-American and Anglo students appeared to be due to the students' ethnic backgrounds and socioeconomic and other social conditions associated with this background. The Mexican-American students exhibited many of the characteristics of the culture of poverty described by Oscar Lewis.

Part of the depressed achievement of Mexican-American students, when compared to Anglo students, can be attributed to their lower self-concepts of ability; fatalistic, present-time orientation; non-democratic independence training experiences; and high religious social distance.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

I. THE PROBLEM

The problems of Spanish-speaking children in the school systems of the southwestern United States have long been the concern of teachers and researchers. Holland wrote in 1962 that:

> The Spanish-speaking school population of Texas, New Mexico, Colorado, Arizona and California has been a unique problem to the educational systems of these states for many years. In spite of the discontinuance of classroom segregation in most states, the level of achievement of the Spanish-speaking child is generally somewhat lower than that of English-speaking children. Throughout the years educators have offered various explanations and solutions to this problem, but few have succeeded in providing the Spanish-speaking child with as beneficial an educational experience as that received by the "Anglo" student. As a result, many Spanish-speaking youngsters are handicapped in later life because they have not always received maximum benefit from their public school experience.[1]

Many of these children come from impoverished homes.[2] However, these children have the additional disadvantage of coming from a minority background which emphasizes different values and is based on the Spanish language. Zintz has observed that the typical school is Anglo-middle-class in its value structure, thus causing a child from a minority background to experience "cultural shock" upon entering school. He stated:

---

[1] William R. Holland, "Language Barrier as an Educational Problem of Spanish-Speaking Children," The Disadvantaged Learner, Staten W. Webster, editor, (San Francisco: Chandler Publishing Co., 1966), p. 338.

[2] Olen E. Leonard and Hellen W. Johnson, Low Income Families in the Spanish-Surname Population of the Southwest, Agricultural Economic Report No. 112, (Washington, D. C.: Government Printing Office, A93.28:112, 1967)

> The child who enters the public school from a minority ethnic background, where another language is predominantly used, faces problems undreamed of by the child who is merely making the transition from pre-school experiences in English language to a specialized segment of his society that uses the same language and emphasizes, at least for the middle-class child, the same set of values.
>
> The minority group child may be said to face two additional obstacles: he is attempting to bridge a wide chasm of cultural values and patterns that have in varying degrees emphasized different behavior spheres in his experience background, and he is immediately confronted with an entirely new language, English, that makes him completely inarticulate if he must express himself in that language from the beginning.[3]

The apprehension of a clear understanding of the cultural background of Mexican-American students, and how it is related to their educational problems has been hampered by the stereotypical images of Mexican-Americans often held by Anglos. These images have resulted in misunderstanding, exclusion and discrimination against the Mexican-American, and have resulted in the perpetuation of the status quo, according to Simmons.[4] He observed:

---

[3] Miles Zintz, Education Across Cultures (Dubuque, Iowa: William C. Brown Book Co., 1963), p. 15.

> Anglo-Americans assume that Mexican-Americans are their potential, if not actual, peers, but at the same time assume they are their inferiors. The beliefs that presumably demonstrate the Mexican-Americans' inferiority tend to place them outside the accepted moral order and framework of Anglo-American society by attributing to them undesirable characteristics that make it "reasonable" to treat them differently from their fellow Anglo-Americans. Thus the negative images provide not only a rationalized definition of the intergroup relation that makes it palatable for Anglo-Americans, but also a substantial support for maintaining the relationship as it is.[5]

The culture of Spanish-speaking people of the southwestern United States, most of whom are Mexican-Americans, has often been contrasted with the dominant middle-class Anglo culture. Typically, the Spanish-speaking people have been described by earlier writers as present-time oriented, fatalistic, resistant to change, autocratic in their child-rearing practices, and relatively unconcerned with efficiency or performance.[6] Many of these same characteristics have recently been reported by Lewis to be aspects of a more general "culture of poverty" which he has identified and described.[7]

---

[4] Ozzie G. Simmons, "The Mutual Images and Expectations of Anglo-Americans and Mexican-Americans," in The Disadvantaged Learner, op. cit., pp. 127-140.

[5] Ibid., p. 139.

[6] See, for example, Lyle Saunders, Cultural Differences and Medical Care (New York: Russell Sage Foundation, 1954); Miles Zintz, op. cit.; and Herschel T. Manuel, Spanish-Speaking Children of the Southwest (Austin, Texas: University of Texas Press, 1965).

Studies of achievement motivation suggest that many of the previously mentioned sociocultural characteristics reportedly present in the Mexican-American culture could be related to the depressed achievement of Mexican-American students.[8] However, the differences between the cultural values of Mexican-American and Anglo students must be clearly determined, and the relation of the former's sociocultural characteristics to their achievement must be explored before it is possible to estimate how much their cultural background influences their achievement. Hence, this study was conducted to examine selected sociocultural differences between junior high school Mexican-American and Anglo students and to determine how these characteristics were linked to achievement.

The major problems examined in this study were identifying some of the sociocultural differences between Mexican-American and Anglo students and determining how these characteristics were related to their achievement.

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[7] Oscar Lewis, La Vida, A Puerto Rican Family in the Culture of Poverty (New York: Random House, 1966)

[8] See Bernard C. Rosen, "The Achievement Syndrome: A Psychocultural Dimension of Social Stratification," American Sociological Review, XXI (April, 1956), pp. 203-211; Glen H. Elder, Jr., Adolescent Achievement and Mobility Aspirations, Institute for Research in Social Science monograph, (Chapel Hill, North Carolina: University of North Carolina at Chapel Hill, 1962); and Wilbur H. Brookover, et al., "Self-Concept of Ability and School Achievement," Sociology of Education, XXXVII (Spring, 1964), pp. 276-278.

Purpose of the Study

The purposes of this study were to detect some of the sociocultural differences between Mexican-American and Anglo junior high school students, to determine how these characteristics were related to the language background and socioeconomic status of Mexican-American students, and to ascertain how these sociocultural characteristics were related to various achievement measures for both groups of students.

Importance of the Study

The Mexican-American people of the Southwest constitute the majority of the Spanish-speaking population of this area. The Spanish-surname population in the five states of the Southwest (Arizona, California, Colorado, New Mexico and Texas) totaled nearly 3.5 million, or about twelve per cent of the total population of the area.[9] Many of these people are in the lower income brackets and are not as well educated as the general United States population. According to one U. S. Government report:

> More than half (52 per cent) of the rural and not quite a third (31 per cent) of the urban Spanish-surname families had less than $3,000 income in 1959, the level of income generally associated with poverty conditions.[10]

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[9] Leonard and Johnson, *op. cit.*

[10] *Ibid.*, p. 10

This same report, in describing the educational level of this Spanish-surname population stated:

> Rural non-farm males 14 years of age and over in 1960 still had a median of only 5 years of schooling completed in Texas and 7 to 8 years in the other four states, compared with 9.5 years for the male non-farm population of the Nation. Attainment for rural non-farm females was a little higher, ranging from a low of 5.2 years in Texas to 8.6 years in California, compared with a national average of 10.1 years.[11]

Not only do Mexican-American students tend to drop out of school earlier than their Anglo peers, but their achievement while they are in school is also well below national norms. The *Equality of Educational Opportunity* study reported that sixth-grade Mexican-American students were 2.4 grade levels behind the average Anglo white student in the metropolitan Northeast in reading comprehension and 2.2 grade levels behind in mathematics achievement. At the twelfth grade the deficit becomes more pronounced, in that Mexican-American students were 3.3 grade levels behind in reading comprehension and 4.1 grade levels behind in mathematics achievement.[12]

A clearer picture of the differences in backgrounds and values between Mexican-American and Anglo students, and an understanding of how these characteristics are related to the former's achievement should help educators meet their needs more effectively and may thereby help to raise their achievement level.

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[11] *Ibid*., p. 21.

[12] James S. Coleman, *et al*., *Equality of Educational Opportunity* (Washington, D.C.: Government Printing Office, OE-38001, 1966), pp. 274-275.

II. DEFINITIONS OF TERMS USED

Anglo. An English-speaking person presently living in the United States, who does not have a Spanish surname and none of whose parents or grandparents were born in Mexico or Latin America. The term Anglo as used in this study does not refer solely to those persons of English derivation. Rather, it refers to those persons who have been assimilated into the predominant culture of the United States to the extent that little or no marginality is evident. This definition is consistent with the classification scheme used by Loomis.[13]

Mexican-American. A person presently living in the United States who has a Spanish surname and/or one or more of whose parents or grandparents were born in Mexico.

Achievement orientation. One of the three aspects of the Achievement Syndrome as described by Rosen. An individual's achievement orientation, according to Rosen, "... provides the internal impetus to excel in situations involving standards of excellence."[14] Achievement orientation includes the attitudes one holds about how much control one has over his environment, how beneficial it is to plan ahead, and how important one's job is in comparison to the rest of his life's interests. Questions from scales described by Kahl were used to measure selected achievement orientation attitudes for this study.[15]

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[13] Charles P. Loomis, Zona K. Loomis, and Jeanne E. Gullahorn, Linkages of Mexico and the United States, Agricultural Experiment Station Research Bulletin no. 14, (East Lansing, Michigan: Michigan State University, 1966), footnote p. 8.

Socioeconomic status. Socioeconomic status is the general term for the position a person or family occupies in the prestige hierarchy of a society and is most often described in terms of the social prestige of a person's occupation and educational level.[16] In this study, the father's occupation, his educational level, and the mother's educational level were used as indices of socioeconomic status.

Independence training. This term refers to the family's child-rearing practices related to preparing the child for adult life. These practices can range from autocratic to democratic. The scales used in this study to measure independence training practices were developed by Elder.[17]

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[14] Bernard C. Rosen, "Race, Ethnicity and the Achievement Syndrome," Racial and Ethnic Relations, Selected Readings, Bernard Segal, editor, (New York: Thomas Y. Crowell, 1966), p. 135.

[15] Joseph H. Kahl, "Some Measures of Achievement Orientation," American Journal of Sociology, LXX (May, 1965), pp. 669-681.

[16] Joseph A. Kahl and James A. Davis, "A Comparison of Indices of Socio-Economic Status," American Sociological Review, XX (June, 1955), pp. 317-325.

Achievement press. This term refers to the amount of pressure the student reported his parents exerted on him to do well in school, to complete high school, and to go on to college. The questions used to determine the parental achievement pressure were derived from questions employed by Elder.[18]

Self-concept of ability. Self-concept of ability is the student's perception of how well his academic ability compares to that of other students. It is one aspect of the self-concept theory as developed by Rogers. Rogers wrote in 1951:

> Self concept or self structure may be thought of as an organized configuration of perceptions of the self which are admissible to the awareness. It is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and to the environment...[19]

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[17] Glen H. Elder, Jr., Adolescent Achievement and Mobility Aspirations, Institute for Research in Social Science monograph, (Chapel Hill, North Carolina: University of North Carolina at Chapel Hill, 1962), pp. 73-75.

[18] Ibid., pp. 85-88.

[19] Carl R. Rogers, Client-Centered Therapy (Boston: Houghton Mifflin, 1951), p. 136.

The scale used to ascertain the student's self-concept of ability was derived from a study by Brookover.[20]

Social distance. Social distance, in the words of Bogardus,

> ... refers to the degrees and grades of understanding and feeling that persons experience regarding each other. It explains the nature of a great deal of their interaction. It charts the character of social relations.[21]

In the context of the present study, social distance refers to the student's report of how closely he would interact with persons of a different national, religious, or language background in a social relationship.

Academic achievement. This term refers to how well the student has performed in specific school-related tasks. The following measures of academic achievement were used: English and mathematics grades and scores on the language and arithmetic subtests of the Iowa Test of Basic Skills.

Intelligence. For the purposes of the present study, intelligence refers to "the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment."[22] The non-language IQ scale of the California Short-Form Test of Mental Maturity was used in this study as a measure of intelligence.

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[20] Wilbur B. Brookover, Ann Paterson and Shailer Thomas, Self-Concept of Ability and School Achievement, Final report of Cooperative Research Project 845, (East Lansing, Michigan: Office of Research and Publications, Michigan State University, 1962).

[21] Emory S. Bogardus, "Measuring Social Distances," Readings in Attitude Theory and Measurement, Martin Fishbein, editor, (New York: John Wiley and Sons, 1967), p. 71.

III. LIMITATIONS OF THE STUDY

The present study was limited to data collected for eighty-seven Mexican-American and thirty-nine Anglo students enrolled in the seventh through the ninth grades of the Las Cruces public schools during the 1967-1968 school year. All of the students were members of families having children enrolled in all three levels of the Las Cruces public schools (elementary, junior high and high school).

Generalizations from this sample should bear in mind the caveat that children from large families often experience a different family environment than do children from smaller families, and that the effects of this environment depend in part upon the student's ordinal position among his siblings.[23]

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[22] David Wechsler, The Measurement and Appraisal of Adult Intelligence (Baltimore: Williams and Wilkens, 1958), p. 7.

[23] See Elder, op. cit., pp. 58-67; and B. C. Rosen, "Family Structure and Achievement Motivation," American Sociological Review, XXVI (August, 1961), pp. 574-585 for discussions of how the family environment is related to family size and the child's ordinal position.

IV. ORGANIZATION OF THE REMAINDER OF THE DISSERTATION

Chapter II reviews previous reports of the various cultural characteristics of Mexican-Americans, and presents pertinent studies of variables related to the achievement of Mexican-American students.

In Chapter III a culturally based achievement motivation model is described and the specific hypotheses tested in this study are presented. The methods of identifying the sample of students and the development of the scales measuring the sociocultural characteristics are also presented.

The methods of testing the hypotheses are described in Chapter IV and the results of these analyses are presented. In Chapter V these results are summarized and discussed. Suggestions for further research are also given in this final chapter.

CHAPTER II

REVIEW OF RELATED LITERATURE

In this chapter, literature of two types is presented. The first section presents anthropological literature related to the sociocultural characteristics of Mexican-Americans, while in the second section relevant educational and sociological studies of achievement among Mexican-American students are reviewed.

I. SOCIOCULTURAL CHARACTERISTICS OF MEXICAN-AMERICANS

The following review of studies presents a consistent picture of the sociocultural characteristics of the Mexican-American people. Some of the writers included in this review have used the term Spanish-speaking people, while others have used the term Mexican-American or Spanish-American, depending on the group they were describing. It should be borne in mind that the Mexican-American people constitute the majority of the Spanish-speaking population of the Southwest. Some of these people are descendants of Mexican citizens who were living in the area when the United States acquired the territory from Mexico, while others are either immigrants or descendants of immigrants.

The Mexican-American population is often considered to be distinct from the Spanish-American population of the

Southwest. These Spanish-Americans are descendants of colonists who came to the territory now known as northern New Mexico and southern Colorado from Spain during the Sixteenth through the Eighteenth Centuries. The subtle distinctions between these two groups are irrelevant to the present study, as both groups are considered to share the same Spanish-speaking culture that the following studies describe.[1]

A study, often referred to by social scientists, was conducted by Kluckhohn and Strodtbeck in the 1950's using samples of residents from five different communities near Gallup, New Mexico. This study measured and compared the value systems of Navajo Indians, Zuni Indians, Spanish-Americans, Mormons, and residents of a nearby Anglo farming village. While the sample sizes from each village were small, ranging from twenty to twenty-three, this study employed the most sophisticated methods of measuring attitudes of any of the studies reviewed.[2]

Kluckhohn and Strodtbeck contrasted the Spanish-American and Anglo cultural values on four points:

---

[1] See Paul A. F. Walter, Jr., Race and Culture Relations (New York: McGraw Hill Book Co., 1952), Chap. XVII, for more on the origins and differences between these two groups.

[2] Florence Kluckhohn and Fred Strodtbeck, Variations in Value Orientations (Evanston, Illinois: Row Peterson and Co., 1961).

(1) orientation toward nature; (2) orientation toward time; (3) orientation toward activities; and (4) types of man-to-man relations that were valued. Their findings were as follows.

1. In the Spanish-American culture there was a "subjugation to nature" orientation, while the Anglo culture had a "mastery over nature" orientation.

2. The Spanish-Americans studied had a present-time orientation and valued the present over the past or the future. The Anglos, on the other hand, valued the future more than the past or the present.

3. The two cultures differed in the kind of activities their members valued. The Spanish-Americans valued "being" more than "doing" and their activities tended to be a more spontaneous expression of their impulses and desires. On the other hand, the Anglos in the sample valued activity on the basis of what they thought it would accomplish. The Anglos were characterised as "doers" who wanted to get things done.

4. The Spanish-Americans and Anglos studied by Kluckhohn and Strodtbeck differed in the kind of relations with other people they valued. The Spanish-Americans accepted and depended on the guidance and support of a father, older brother, or other person in authority. On the other hand, the Anglos studied were more individualistic, tended to assume more responsibility for themselves,

and shunned a dependent relationship.[3]

Several years earlier Saunders had reported similar differences between the cultural characteristics of the English and Spanish-speaking people of the Southwest. His general observations were part of a survey of the differences in medical practices between the two groups.[4] Saunders noted that in the early 1950's the Spanish-speaking people of the Southwest could be divided into three subgroups: The Spanish-American group, who were descendants of colonists from Spain or New Spain and lived in farming villages in northern New Mexico and Colorado; the Mexican-Americans, who were immigrants or descendants of immigrants from Mexico and were more widely dispersed throughout the Southwest; and Mexicans, who were illegal entrants or workers on temporary permits and generally intended to return to Mexico. Saunders noted that there were some differences among the three groups, but considered them similar enough to group them together as Spanish-speaking people when comparing them to the English-speaking people of the United States.

Saunders described the differences between the English and Spanish-speaking peoples in terms of seven broad characteristics: (1) language, (2) orientation to time, (3) attitudes toward change, (4) attitudes toward work and efficiency, (5) attitudes about acceptance and resignation, (6) attitudes toward dependence, and (7) attitudes toward formal organizations.[5] Saunders descriptions were as follows.

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[3] Kluckhohn and Strodtbeck, _op_. _cit_., pp. 138-174.

[4] Lyle Saunders, _Cultural Differences and Medical Care_ (New York: Russell Sage Foundation, 1954).

1. Language. Spanish-speaking persons often did not speak English well and felt uncomfortable when trying to talk to Anglos. Most of the Anglos spoke little or no Spanish and there was little unnecessary mingling of Anglos and Spanish speakers. This was due to mistrust and feelings of strangeness on the parts of both groups, according to Saunders.[6]

2. Orientation to time. Anglos were oriented primarily toward the future and were preoccupied with time. On the other hand, the Spanish-speakers were concerned with the immediate present, as its demands had to be coped with immediately and its pleasures enjoyed then.

3. Attitudes toward change. The Anglos observed were highly oriented toward change. They accepted and expected change, whereas the Spanish-speaking person was often threatened by change and found security in the traditional ways.

4. Attitudes toward work and efficiency. Anglos,

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[5] Saunders, *op. cit.*, pp. 104-140.

[6] *Ibid.*

as a group, valued activity above contemplation and saw industriousness as a virtue. A person in the Anglo group was often identified by his occupation and occupational success was highly valued. According to Saunders, this attitude was closely related to the Anglos' future time orientation. Anglos were concerned with getting the job done and they valued practicality and efficiency. On the other hand, "The Spanish-speaking ideal," noted Saunders, is _to be_ rather than _to do_."[7] Work was the fated lot of man, from the Spanish-speaking viewpoint, but one should do only what he had to and no more. A person was known by his personal qualities, rather than by his occupation, in the Spanish-speaking culture.

5. _Attitudes toward acceptance and resignation_. The Anglos generally believed that one had the obligation to struggle against and overcome problems, whereas the Spanish-speaking people were more likely to accept and adjust to difficulties.

6. _Attitudes toward dependency_. Independence, according to Saunders, was highly valued by Anglos, while dependence was "... undesirable, if not downright pathological."[8] On the other hand, in the Spanish-speaking culture a dependent status, when the result of misfortune

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[7] Saunders, _op_. _cit_., p. 126.

[8] Saunders, _op_. _cit_., p. 133.

or other circumstances beyond the person's control, was not considered extraordinary.

7. Attitudes toward formal organization. According to Saunders there were many formal organizations in the Anglo culture and Anglos often organized a committee or other formal organization to cope with a group problem. The Spanish-speaking culture, on the other hand, had few formal organizations and group problems were often solved by an informal group of persons, rather than by the organization of a committee.[9]

All the cultural traits of the Mexican-Americans listed above were also given by Manuel in his review of previous studies of the differences between the Spanish-speaking and the English-speaking cultures. Manuel also noted two additional differences between the Spanish-speaking and Anglo cultures. He noted that the Spanish-speaking people were predominantly Catholic, while the Anglos were mostly Protestant. He also commented that the traditional Spanish-speaking family structure was an extended family with an authoritarian father, mother devoted mostly to home and church duties and close supervision of girls but relative freedom for the boys.[10]

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[9] Ibid., pp. 139-140.

[10] Herschel T. Manuel, Spanish-speaking Children of the Southwest (Austin, Texas: University of Texas Press, 1965), pp. 34-44.

In an unpublished monograph written in 1958, Ulibarri made several comments on the cultural characteristics of the Spanish-speaking people that have a bearing on the present study. He pointed out that the Spanish-American culture is changing as the people become more acculturated; therefore, descriptions given ten years ago may not be valid today. He commented that the Spanish-Americans' present time orientation is a result of their lower socioeconomic status and is paralleled by a similar present time orientation in the lower class Anglo. Ulibarri also stated that the fatalistic attitude ascribed to the Spanish-American is a misinterpretation of his behavior. Ulibarri wrote he believed the Spanish-American did all he could within the limits of his knowledge and resources, and only then exclaimed 'as God wills it' as a matter of mental hygiene therapy.[11]

Ulibarri's comments suggested that some of these sociocultural characteristics that previous writers had viewed as distinctively Mexican-American are aspects of the "culture of poverty" described by Oscar Lewis. This culture of poverty, according to Lewis, is

> ... a subculture of western society with its own structure and rationale, a way of life handed on from generation to generation along family

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[11] Horacio Ulibarri, "The Effects of Cultural Differences in the Education of Spanish-Americans," (unpublished monograph, University of New Mexico, Albuquerque, New Mexico, 1958).

> lines. The culture of poverty is not just a matter of deprivation or disorganization, a term signifying the absence of something. It is a culture in the traditional anthropological sense that it provides human beings with a design for living, with a ready-made set of solutions for human problems, and so serves a significant adaptive function. This style of life transcends national boundaries and regions and rural-urban differences within nations. Wherever it occurs, its practitioners exhibit remarkable similarity in the structure of their families, in interpersonal relations, in spending habits, in their value systems and in their orientation in time.[12]

Lewis continued with this description of the value system and cultural traits of the culture of poverty:

> The individual who grows up in this culture has a strong feeling of fatalism, helplessness, dependency and inferiority.... Other traits include a high incedence of weak ego structure, orality and confusion of sexual identification, all reflecting maternal deprivation; a strong present-time orientation with relatively little disposition to defer gratification and plan for the future, and a high tolerance for psychological pathology of all kinds.[13]

Since, as indicated previously, many of the Mexican-Americans are living at the poverty level, it is possible that the sociocultural characteristics that previous writers presented as uniquely Spanish-speaking cultural characteristics are really manifestations of the culture of poverty.

The typical descriptions of the Mexican-American cultural characteristics that were reviewed previously have been challanged by the Mexican-American anthropologist Romano, who presented historical evidence that challenges the "passivity" stereotype of the Mexican-Americans in the Southwest.[14] He questioned the generalizability of Kluckhohn and Strodtbeck's findings since they were based on a sample of 23 persons in a rural community of 150 people and notes how often social scientists have cited this study as "describing Mexican-American and New Mexican value orientations for the past 400 years."[15] Romano pointed out that the view presented by most social scientists of Mexican-Americans was an extension of a statement made over one hundred years ago by a New Mexico Senator, T. Stevens. Senator Stevens described the native New Mexicans as "a hybrid race of Spanish and Indian origin, ignorant, degraded, demoralized and priest-ridden."[16] Romano concluded:

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[12] Oscar Lewis, "The Culture of Poverty," Scientific American, CCXV (October, 1966), p. 19.

[13] Ibid., p. 23.

> It is clear ... that contemporary social science views of Mexican-Americans are precisely those held by people during the days of the American frontier.... What we have ... are contemporary social scientists busily perpetuating the very same opinions of Mexican culture that

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[14] Octavio I. Romano--V., "The Anthropology and Sociology of the Mexican-Americans: The Distortion of Mexican-American History," El Grito, II (Fall, 1968), pp.13-26.

[15] *Ibid*., p. 17.

[16] *Ibid*., p. 24

were current during the Mexican-American War.[17]

Clearly, then, it is important to see what differences there actually are between Mexican-American and Anglo students. Also, it seems important to relate the sociocultural characteristics of the former to the more general culture of poverty concept.

II. STUDIES RELATING SOCIOCULTURAL CHARACTERISTICS TO THE ACHIEVEMENT OF MEXICAN-AMERICAN STUDENTS

The studies reviewed in this section all deal with education and the sociocultural background of Spanish-speaking students. They present a general indication that the sociocultural characteristics of Mexican-American students are related to how well they do in school, but the picture is still far from clear.

Several studies of Spanish-speaking students have resulted in somewhat conflicting findings regarding differences between Mexican-American and Anglo values and the effect of such differences on students.

Ulibarri argued from his own observations that the clash between the Anglo middle-class school values and the Mexican-American culture places a heavy strain on the Mexican-American student, possibly resulting in personality problems and a distortion of values.[18] An opposing stand was taken by Romero, who found that the sample of secondary level Spanish-American students he studied demonstrated a high degree of acculturation, complied with the dictates of the Anglo value system, and experienced little cultural conflict while in school.[19]

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[17] *Ibid.*

However, Mexican-American high school graduates and dropouts differ from each other in several important respects. A study by Takesian of 102 Mexican-American high school graduates and dropouts indicated that the dropouts felt their ethnicity made it more difficult to get an education. They came from families of lower socioeconomic status than did the graduates, and felt less able to speak English adequately. The dropouts also had more reading difficulties than did the graduates. The dropouts did not like high school and indicated that they did not feel liked by their teachers. Takesian concluded on the basis of interviews with the students that the main reason that the dropouts failed was not because they were Mexican-American but because there was not enough effort on their part to meet the requirements for graduation. He also concluded that the superior English speaking and reading abilities of the graduates were important factors in determining their successful school experiences.[20]

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[18] Horacio Ulibarri, "Educational Needs of the Mexican-American," (paper prepared for the National Conference on Educational Opportunities for Mexican-Americans, Austin, Texas, April 25-26, 1968).

[19] F. E. Romero, "A Study of Anglo and Spanish-American Culture Value Concepts and Their Significance in Secondary Education," (unpublished Doctoral dissertation, University of Denver, 1966).

The attitudes of Mexican-American students could well be related to their failure to meet the school's requirements. A study by Demos found that even when Mexican-American and Anglo students were matched on the basis of socioeconomic level, intelligence, age, sex, and grade level, there were still significant differences between the groups on six school-related attitudes, including the students' views on the desirability of dropping out of school and the desirability of good grades. Demos found that random samples of Mexican-American and Anglo students (not matched on any variable) differed on the attitudes mentioned above plus the students' views on the necessity of a high school education.[21]

Several non-intellectual variables also appear to be related to the achievement of Mexican-American students, according to Gill and Spilka. These researchers matched a group of underachieving and a group of achieving

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[20] S. A. Takesian, "A Comparative Study of the Mexican-American Graduate and Dropout," (unpublished Doctoral dissertation, University of Southern California, 1967).

[21] George Demos, "Attitudes of Mexican-American and Anglo-American Groups Toward Education," Journal of Social Psychology, LVII (1962), pp. 249-256.

Mexican-American students on the basis of sex, age, intelligence and number of courses taken. Using the California Psychological Inventory and two other scales, they found that the underachievers manifested more hostility and less social maturity, intellectual efficiency and conformity to rules than did the achievers.[22]

According to Manuel, part of the reduced academic achievement of Spanish-speaking students may be attributed to the students having internalized a negative self-image.[23] However, two researchers contend that Mexican-American students as a group do not have a negative self-concept. Carter, using a semantic differential with 189 Mexican-American and 98 Anglo high school students, found no statistically significant differences between the groups on three scales measuring how good, strong and intelligent they viewed themselves.[24]

Similarly Najmi, using instruments he developed, found no statistically significant differences between the self-concepts of 104 Spanish-American and an equal number of Anglo elementary school students. He found that the girls in both groups showed a more negative attitude toward themselves than did the boys. Najmi also found that the self-concepts of the Spanish-American boys were more closely related to academic problems than they were to social relationships in school. This relationship between the Spanish-American boys' self-concepts and their school problems was also stronger than was the relationship between the Anglo boys' self-concepts and their school problems.[25]

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[22] Louis Gill and Bernard Spilka, "Some Non-intellectual Correlates of Academic Achievement Among Mexican-American Secondary School Students," _Journal of Educational Psychology_, LIII (June, 1962), pp. 144-149.

[23] Manuel, _op. cit._, p. 189.

[24] Thomas P. Carter, "The Negative Self-Concept of Mexican-American Students," _School and Society_, XCVI (March, 1968), pp.217-219.

Schwartz identified several differences in the attitudes of ninth and twelfth grade Mexican-American and Anglo students in a large urban school district. He also reported that some of the attitudes of these students were related to their achievement. Employing scales developed from the questionnaire responses of 3,000 Mexican-American and Anglo students, Schwartz found the Mexican-American students to be more oriented toward the family, to have more concern over adult as opposed to peer disapproval, to have less of a future-time orientation, and to approve of the use of force to resolve conflicts. He found the Mexican-American and Anglo twelfth grade students to be more similar in their attitudes than the ninth grade students.

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[25] M. A. K. Najmi, "Comparison of Greeley's Spanish-American and Anglo-White Elementary School Children's Responses to Instruments Deisgned to Measure Self-Concept and Some Related Variables," (unpublished Doctoral dissertation, Colorado State College, 1962).

High achievement on the part of the Mexican-American students, Schwartz found, was associated with a future-time orientation, faith in human nature, acceptance of the formal goals of the school, and belief in the peaceful resolution of conflict.[26]

A recent study by Anderson and Johnson also indicates that sociocultural traits are linked to the achievement of Mexican-American students. In their study, using sections of the same data utilized in the present study, nine factors were extracted from the responses of two-hundred sixty-three Mexican-American and Anglo junior high and high school students and were used to predict the students' first semester grades in English and mathematics. Taking the Mexican-American and Anglo students together as one group, twenty-three per cent of the variation in their English grades, and fourteen per cent of the variation in their mathematics grades could be accounted for by the regression equations.

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[26] A. J. Schwartz, "Affectivity Orientations and Academic Achievement of Mexican-American Youth," (unpublished Doctoral dissertation, University of California, Los Angeles, 1967).

The factors that contributed significantly to the two regression equations were different. The variables that contributed to the prediction of the students' English grades were self-concept of ability, sex, father's education, language usage in the home, parental stress on academic achievement, parental stress on completing high school, and parental stress on attending college. On the other hand, the variables that contributed to the prediction of mathematics grades were self-concept of ability, parental stress on academic achievement, students' desire to achieve in school and parental stress on attending college.[27]

III. SUMMARY

Mexican-American students often come from impoverished homes, do not stay in school as long or achieve as well as their Anglo peers. A number of studies have indicated that their culture is based on a different language and that their values are quite different from the middle-class Anglo values that permeate the typical school.

The general picture presented in the literature is that Mexican-American (or Spanish-speaking) peoples differ from Anglo-Americans on the following sociocultural characteristics: (1) language, (2) attitudes regarding man's relation to nature, (3) orientation to time, (41 attitudes toward work and efficiency, (5) attitudes toward change, (6) attitudes toward formal organizations, (7) religious background, and (8) family organization and child-rearing practices.

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[27] James G. Anderson and William H. Johnson, "Sociocultural Determinants of Achievement Among Mexican-American Students," (paper prepared for the National Conference on Educational Opportunities for Mexican-Americans, Austin, Texas, April 25-26, 1968).

These typical descriptions have been challanged as inaccurate and inappropriate for today's Mexican-American population. Furthermore, the culture of poverty concept reviewed suggests that these characteristics previously viewed as uniquely part of the Spanish-speaking culture are aspects of the culture of poverty and associated with the marginal social condition and depressed socioeconomic status of most of the members of the Spanish-speaking population.

Studies of Mexican-American students indicated that while one researcher found Spanish-speaking students experiencing little cultural conflict in school, another found high school dropouts reported their ethnicity as a source of their difficulties, and several found marked differences between Anglo and Mexican-American students on school related variables. A study of Mexican-American dropouts found that they had less reading and spoken English fluency, came from families of lower socioeconomic status, felt unliked by the teachers, and had not made enough effort to meet the requirements for graduation.

Another researcher found that Mexican-American students differed significantly from Anglos on their views concerning the desirability of obtaining good grades in school, staying in school, and on the necessity of a high school education. Underachieving Mexican-American students exhibited more hostility and less social maturity, intellectual efficiency and conformity to rules than did achieving Mexican-American students, according to another report.

Two studies indicated no significant differences between the self-concepts of Mexican-American and Anglo students, but one did relate their self-concepts to academic problems. Another recent study found that the grades of Anglo and Mexican-American students were related to language usage, self-concept of ability, and the students' and parents' attitudes toward achievement and education.

These studies indicate that the sociocultural characteristics of Mexican-American students are related to their school achievement, but the picture is still unclear.

CHAPTER III

OBJECTIVES, SAMPLE AND SCALES USED

The review of the literature indicated there is general agreement among most of the writers concerning the sociocultural characteristics of Mexican-Americans. However, the validity of some of these descriptions has been challenged recently, since many of the cultural characteristics are not unique to Mexican-Americans but are similar to those of other groups living in the culture of poverty. Also, there are conflicting opinions as to the degree of cultural conflict that Mexican-Americans experience in school, and it is not clear as to how these sociocultural characteristics are related to achievement.

I. OBJECTIVES

Zintz, as indicated earlier, postulated that the differences between the Anglo cultural values of the school and the Mexican-American cultural values were causes of the depressed achievement of Mexican-American students.[1] The present study had three major objectives: (1) to determine some of the sociocultural differences between Mexican-American and Anglo junior high school students, (2) to determine if the sociocultural characteristics of the Mexican-American students were related to their language background or their socioeconomic status, and (3) to determine how the sociocultural characteristics of both groups of students were related to their achievement. These objectives necessitated the selection of clearly identified and measurable sociocultural characteristics.

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[1] Miles Zintz, Education Across Cultures (Dubuque, Iowa: William C. Brown Book Co., 1963).

Two criteria were used in selecting the sociocultural characteristics examined in this study: (1) the literature indicated that Mexican-Americans differed from Anglos on the characteristic, and (2) there was reason to believe the characteristic was related to achievement. The literature reviewed in Chapter II provided many possible characteristics to choose from, but the second criterion necessitated an examination of the variables related to achievement.

Variables Related to Achievement.

Lavin, in a comprehensive review of the literature up to 1963, indicated the following three categories of variables which influenced achievement: (1) intelligence and ability factors, (2) sociological determinants, and (3) personality characteristics.[2] The variables of interest in this study were from the second and third category.

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[2] David E. Lavin, The Prediction of Academic Performance (New York: Russell Sage Foundation, 1965).

These sociological and psychological variables influencing achievement have been classified by Rosen as aspects of the "Achievement Syndrome".[3] Rosen used the term Achievement Syndrome to describe "the individual's psychological and cultural orientation towards achievement".[4] He described this syndrome as being composed of three factors:

> The first is a psychological factor, achievement motivation, which provides the internal impetus to excel in situations involving standards of excellence. The second and third components are cultural factors, one consisting of certain value orientations which implement achievement-motivation behavior, the other of culturally influenced educational-vocational aspiration levels.[5]

Rosen further indicated that two of these three factors in turn consist of several aspects. Achievement motivation consists of : (1) achievement training "in which the parents, by imposing standards of excellence upon tasks, by setting high goals for their child ... communicate to him that they expect evidences of high achievement"; and (2) independence training, "in which the parents indicate to the child that they expect him to be self reliant and, at the same time, grant him relative autonomy in decision-making situations."[6]

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[3] Bernard C. Rosen, "The Achievement Syndrome: A Psychocultural Dimension of Social Stratification," American Sociological Review, XXI (April, 1956), pp. 203-211; ane Bernard C. Rosen, "Race, Ethnicity and the Achievement Syndrome" in Racial and Ethnic Relations, ed. Bernard Segal, (New York: Thomas Y. Crowell, 1966), pp. 133-153.

[4] Rosen, "Race Ethnicity and the Achievement Syndrome," op. cit., p. 134

[5] Ibid, pp. 134-135.

Achievement value orientations, according to Rosen, include three sets of values: (1) activistic-passivistic orientation, which "concerns the extent to which the culture encourages the individual to believe in the possibility of his manipulating the physical and social environment to his advantage," (2) individualistic-collectivistic orientation, which "refers to the extent to which the individual is expected to subordinate his needs to the group," and (3) present-future orientation, which "concerns the society's attitude toward time and its impact upon behavior."[7] Educational-vocational aspiration levels, the third factor of the Achievement Syndrome, was not broken down into components by Rosen.

The typical cultural descriptions of Mexican-Americans as fatalistic, present-time oriented, autocratic in their child-rearing practices, and unconcerned with performance or efficiency indicate that they differed markedly from the Anglos on several aspects of the Achievement Syndrome.

The student's self-concept is a personality variables related to achievement. One's self-concept variously called self-image or self-esteem, is a personality factor that evolves out of one's sociocultural milieu. An eight year study conducted by Coopersmith indicated that the important factors related to high self-esteem were the closeness of the relationship between the child and his parents and the form and type of control or discipline employed by the parents.[8] Coopersmith also reported that youngsters who had high self-esteem both set higher standards for themselves and came closer to achieving these standards than did youngsters of low self-esteem.[9] The Equality of Educational Opportunity study reported that self-concept correlated strongly with the achievement measures, in some cases the correlation being as high as 0.40 or 0.50.[10]

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[6] Ibid., p. 137.

[7] Ibid., pp. 137, 143, 144.

The studies reviewed earlier did not clearly indicate that Mexican-American students had a low self-concept. One writer, Manuel,[11] had indicated he thought Spanish-speaking students had internalized a negative self-image, but two other researchers, Carter,[12] and Najmi[13] reported they found no significant differences between the self-concepts of Anglo and Mexican-American students.

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[8] Stanley Coopersmith, The Antecedents of Self-Esteem (San Francisco: W. H. Freeman and Co., 1967), p.240.

[9] Stanley Coopersmith, "Studies in Self-Esteem," Scientific American, CCXVIII (February, 1968), pp. 96-107.

[10] Coleman, et al., op. cit., p. 319.

[11] Manuel, op. cit., p. 189.

Sociocultural Variables Examined in this Study.

After considering the variables related to achievement and the characteristics on which the Mexican-American and Anglo cultures had been contrasted, the following seven sociocultural variables were chosen for inclusion in the present study: (1) socioeconomic status, (2) language usage in the home, (3) self-concept of ability, (4) achievement orientation attitudes, (5) family independence training practices, (6) parental achievement press, and (7) the students' social distance. Each of these variables will now be considered in detail.

Socioeconomic status. Socioeconomic status is often cited as being a correlate of both intelligence and achievement. Lavin, for example cites at least thirteen major studies that demonstrated the relationship of socioeconomic status to school performance.[14] According to a study by Wolf, the relation between socioeconomic status and achievement may be due to the child-rearing practices and family interaction patterns that are related to the socioeconomic status of the parents, rather than to their socioeconomic status per se.[15] The interest in socioeconomic status in the present study was not in how it may be related to achievement, but rather in how it may be related to the sociocultural characteristics of the Mexican-American students.

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[12] Carter, op. cit.

[13] Najmi, op. cit.

[14] Lavin, op. cit., pp. 123-128.

Language background. Since English is the medium of instruction, language difficulties are often cited by educators as one of the reasons for the Mexican-American student's difficulties in school.[16] Interest was focused on language usage in the home to see how it was related to achievement.

Attention was also focused on language background in this study of its possible relationship to the characteristics associated with the Spanish-speaking people's culture. A study by Nelson found that the use of Spanish as the main language persists to a greater extent in third generation Spanish-surname families than does the use of French or German in third generation families of those extractions.[17] Walter, presenting a common anthropological viewpoint on the relation of language and culture, stated:

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[15] Richard M. Wolf, "The Identification and Measurement of Environmental Variables related to Intelligence," (unpublished Doctoral dissertation, University of Chicago, 1964.)

[16] Zintz, op. cit., pp. 122, 194.

> Language is the medium through which culture is transmitted, it is one of the first things the child learns and, once acquired, it becomes a key which opens to him the rest of his culture. ... It is through language that symbolic values are imparted and 'group consciousness, rapport, solidarity and integrity' are maintained.
>
> Language is one of the strongest bonds uniting a cultural group. It is their 'sign of recognition' and their 'badge of brotherhood.' ... Language ... is a good guide to the way a person perceives events and objects in the world about him.[18]

Landes, when describing how rooted the Mexican-American culture is in the Spanish language, observed that even when forbidden to speak Spanish at work or at school, the family

> ... fosters a vociferous use of Spanish. It (Spanish) fosters tender memories of Mexico, home of ancestors, living kinsmen, and the mother Church. It teaches children never to forget 'loyalty' to Mexico nor guilt over leaving it.[19]

Self-concept of ability. The Equality of Educational Opportunity study reported that the students' self-concept correlated strongly with measures of their achievement.[20] While other studies, such as the one by Coopersmith,[21] have demonstrated a similar relationship between self-concept and achievement there is evidence that this relationship is independent of intelligence. Brookover and his associates found a significant partial correlation of 0.40 between self-concept and academic performance when measured intelligence was held constant.[22]

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[17] Lowry Nelson, "Speaking of Tongues," American Journal of Sociology, LIV (November, 1943), pp. 202-210. Nelson also noted that the persistence of Spanish is particularly high in New Mexico and Colorado.

[18] Paul A. F. Walter, Jr., Race and Culture Relations (New York: McGraw Hill Book Co., 1952), pp. 25, 34.

[19] Ruth Landes, Culture in American Education (New York: John Wiley and Sons, 1965), p. 296.

As mentioned earlier, Manuel believed that part of the reduced academic achievement of Spanish-speaking students may be attributed to the students having internalized a negative self-image.[23]

Achievement orientation. Achievement orientation was one of the three factors of the Achievement Syndrome described by Rosen, and was found by him to be related to high school grades.[24] Kahl identified and developed scales to measure four components of achievement orientation, and found several of these components to be related to achievement.[25] He also recently reported that two of these components, activism and occupational primacy, were among eleven factors he found to be indicative of modern, technologically oriented urban attitudes versus rural, non-technologically oriented attitudes of persons in Brazil and Mexico.[26]

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[20] Coleman, et al., op. cit., p. 319.

[21] Coopersmith, "Studies in Self-Esteem," op. cit.

[22] Wilbur Brookover, et al., "Self-Concept of Ability and School Achievement," Sociology of Education, XXXVII (Spring, 1964), pp. 271-278.

[23] Manuel, op. cit., p. 189.

[24] Rosen, "The Achievement Syndrome: A Psychocultural Dimension of Social Stratification," op. cit.; and Rosen, "Race, Ethnicity and the Achievement Syndrome," op. cit.

Interest was focused on achievement orientation because Mexican-American values were so often contrasted with Anglo values on their time orientation and activistic-passivistic orientation.

Independence training. Independence training was another aspect of Rosen's Achievement Syndrome which was described earlier.[27] Elder found that democratic independence training on the part of the parents was associated with high academic motivation and with high achievement on the part of students. He found that the same general pattern held true regardless of the social class of the family, although lower-class parents tended to engage less in independence training than did the parents of middle-class students.[28]

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[25] Joseph H. Kahl, "Some Measures of Achievement Orientation," American Journal of Sociology, LXX (May, 1965), pp. 669-681.

[26] Joseph H. Kahl, The Measurement of Modernism (Austin, Texas: University of Texas Press, 1968).

[27] Rosen, op. cit.

Since Mexican-American parents had been described as being autocratic in their child-rearing practices, independence training was included as a variable in this study.

Parental achievement press. Elder also found that the students' overall academic motivation was positively related to parental achievement pressure. Furthermore, parental achievement pressure was not simply related to school performance, according to Elder. The amount of reported parental pressure tended to increase as the students' grades decreased. However, this relationship was not strong and a sizable proportion of students with good grades reported considerable parental pressure. Middle and lower-class parents were equally likely to put pressure on high achieving students; however, middle-class parents tended to pressure low achieving students more than lower-class parents did.[29]

Since Mexican-American families were reportedly unconcerned with performance and efficiency and because this could affect the students' achievement, achievement press was included in the present study.

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[28] Glen H. Elder, Jr., Adolescent Achievement and Mobility Aspirations, Institute for Research in Social Science Monograph, (Chapel Hill, North Carolina: University of North Carolina at Chapel Hill, 1962), pp. 73-75.

[29] Elder, op. cit., pp. 89-90.

Social distance. Ordinarily, social distance measures are not explicitly related to achievement, but there are theoretical reasons why they may be related to the achievement of Mexican-American students. Social distance scales have been employed by social scientists as a measure of a person's prejudice toward individuals of differing backgrounds. The typical school is steeped in Anglo-middle-class values, and instruction for the most part is accomplished by middle class teachers speaking little or no Spanish.[30] A Mexican-American student may well be repulsed by the school environment and teachers; thus, resulting in him not doing as well in school. In this case, the student's social distance would be directly related to his poor achievement.

The literature provided some evidence that Mexican-Americans and Anglos differed in their social distance. Saunders had observed in the 1950's that there was little unnecessary mingling of Anglos and Spanish-speakers. He also indicated there were feelings of strangeness and mistrust on the parts of both groups.[31] Loomis and his associates, in a more recent study, found a surprisingly high level of prejudice, as measured by social distance scales, directed by native Mexican citizens toward various groups including Protestants and Whites. He also reported a moderate level of prejudice toward Protestants on the part of Spanish-speaking informants from the Southwest.[32]

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[30] Zintz, op. cit., Chap. III.

[31] Saunders, op. cit., p. 112.

Because of the possible relation of social distance to the achievement of Mexican-American students, this variable was included in the study.

The methods used to generate the scales measuring the above seven sociocultural variables are described in detail later in this chapter. Before discussing the specific hypotheses for these variables, the method of arriving at these hypotheses will be presented.

Culturally Based Achievement Motivation Model.

Many of the specific hypotheses concerning the above variables were derived from a general culturally based achievement motivation model based on the literature. This model consisted of two parts: (1) the relation of language to the sociocultural variables, and (2) the relation of these variables to achievement.

The first part of the model was developed in the following manner. The Mexican-American culture is often considered to be rooted in the Spanish language. The anthropological view, as presented earlier indicates that "language is the medium through which culture is transmitted."[33] If this is true, a shift to the use of English by Mexican-Americans could produce a change in some of their cultural values. Mexican-Americans using English at home would be expected to have sociocultural characteristics similar to Anglos, while those using Spanish at home would be expected to have characteristics similar to those typically given in the literature. In this manner, language background is viewed as a determiner of of the sociocultural characteristics in the model.

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[32] Charles P. Loomis, Zona K. Loomis and Jeanne Gullahorn, Linkages of Mexico and the United States, Agricultural Experiment Station Research Bulletin No. 14, (East Lansing, Michigan: Michigan State University, 19660, pp. 36-37.

The second part of this culturally based achievement motivation model dealt with the relationship of these variables to achievement. Each variable was presumed to be a potential determiner of the student's achievement in precisely the manner described in detail in the previous section.

The complete culturally based achievement motivation model is presented diagrammatically in Figure 1. This model postulates a number of interrelationships among the variables. For both Mexican-American and Anglo students, high achievement should be associated with the following: (1) high self-concept of ability, (2) high achievement orientation, (3) democratic independence

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[33] Walter, op. cit., p. 25.

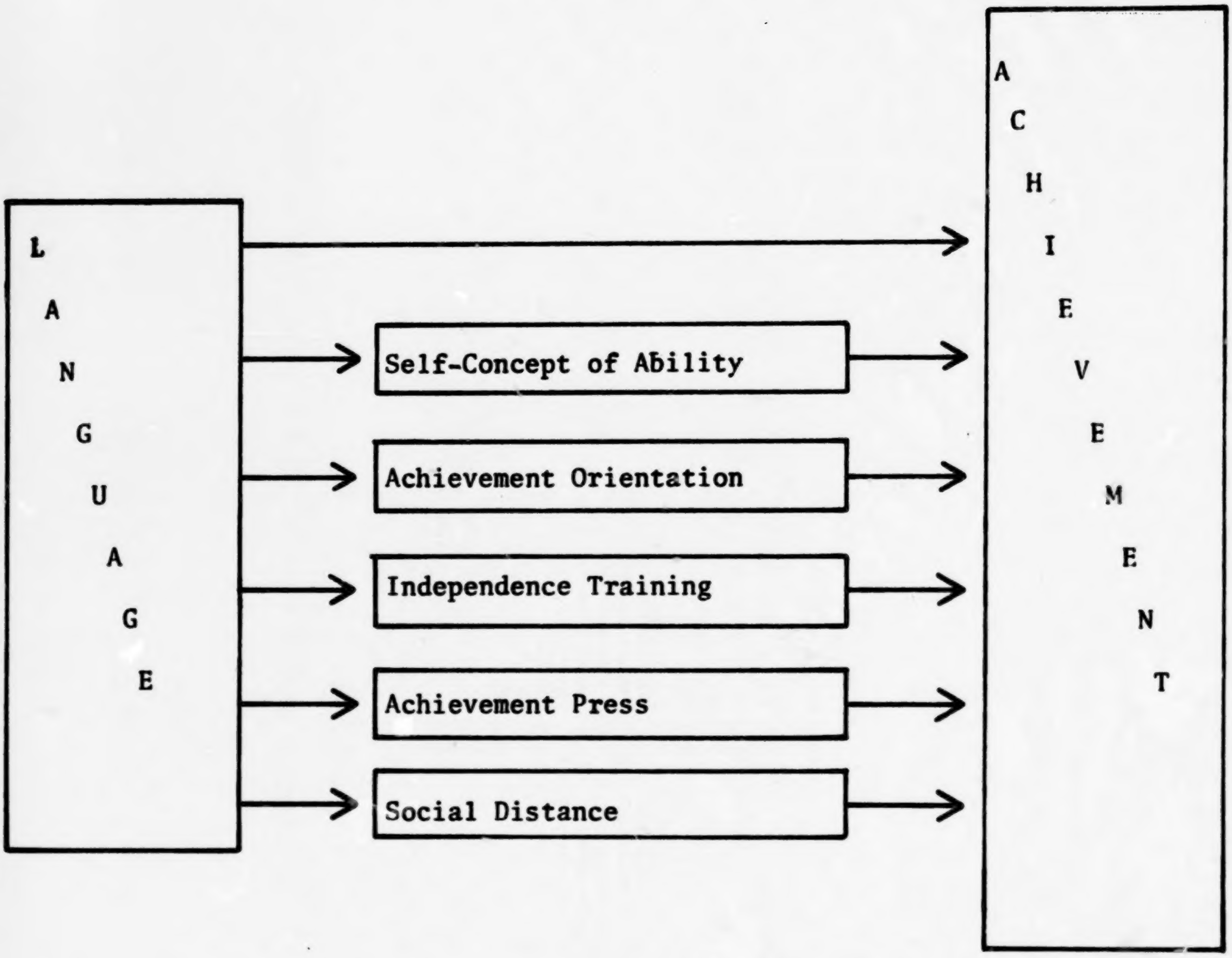
LANGUAGE
Self-Concept of Ability
Achievement Orientation
Independence Training
Achievement Press
Social Distance
ACHIEVEMENT

FIGURE 1

CULTURALLY BASED ACHIEVEMENT MOTIVATION MODEL training, and (4) high parental achievement pressure. In addition to the above, for Mexican-American students high achievement should be associated with an English-speaking background and low social distance. The language background of the Mexican-American students should be directly related to their achievement because of their difficulties with English. Furthermore, language background should be indirectly related to achievement through the postulated link between language and the variables.

For Anglo students the links between language and the variables and between language and achievement are not applicable, as they all come from an entirely English-speaking background.

This achievement motivation model was used as a device for pulling together explicitely the manner in which language and the other variables could be related to achievement. This model was also used to generate specific, testable hypotheses.

Hypotheses.

The hypotheses were grouped in two categories, hypotheses about the sociocultural characteristics, and hypotheses about the relation of the sociocultural characteristics to achievement.

Hypotheses about sociocultural characteristics.

The study was designed to test the following hypotheses about ethnicity, language background and the sociocultural characteristics:

1. Mexican-American and Anglo students differ significantly on each of the sociocultural characteristics measured.

2. Boys and girls differ on some of these characteristics, particularly the measures of achievement orientation.

3. Mexican-American students from English-speaking backgrounds have characteristics more similar to those of the Anglo students than do the students from Spanish-speaking backgrounds.

4. The relation between the Mexican-American students' language background and their sociocultural characteristics is independent of their socioeconomic status.

Hypotheses about achievement and the sociocultural characteristics. The study was designed to test the following hypotheses about the sociocultural characteristics of each group of students and their achievement.

1. For both Mexican-American and Anglo students, high achievement is associated with the following characteristics: (1) high self-concept of ability, (2) high achievement orientation, (3) democratic independence training, and (4) high parental achievement pressure.

2. For Mexican-American students not only is the above true, but high achievement is also associated with

an English-speaking background and low social distance.

II. THE SAMPLE

The present study was based on data from 218 junior high school students enrolled in the Las Cruces public schools during the 1967 - 1968 school year. These students were part of a larger sample of elementary, junior high, and high school students drawn for a pilot project as part of the El Paso Mathematics Project of the Southwestern Educational Developmental Laboratory, Austin, Texas.

For this pilot project a population of two hundred sixteen families with children at all three levels of the Las Cruces public schools was identified by means of an initial survey of the junior high schools. At the request of the central office, only families with children at all three levels of the public schools were included. This population was then grouped on the basis of nationality, number of generations removed from Mexico, and language usage in the home. From this population a non-proportional stratified random sample was drawn. The original population and the sample drawn are shown in Table I. Where less than thirty families were in a group all the families were included in the sample, as this was the only feasible method of ensuring a large enough number in each group to detect differences between the groups. The report by Anderson and Johnson cited earlier dealt with some of the

TABLE I

LAS CRUCES FAMILIES WITH CHILDREN AT ALL THREE LEVELS OF THE PUBLIC SCHOOLS STRATIFIED BY NATIONALITY AND BY GENERATION

GROUP	NATIONALITY	POPULATION	SAMPLE
1	MEXICAN-AMERICAN Student born in Mexico, one or both parents born in Mexico.	14	14
2	MEXICAN-AMERICAN Student born in U. S., one or both parents born in Mexico.	19	19
3	MEXICAN-AMERICAN Students born in U. S., both parents born in U. S., one or more grand parents born in Mexico.	24	24
4	MEXICAN-AMERICAN Spanish-surname student, parents and grand parents all born in U. S., Spanish used predominantly in home.	21	21
5	MEXICAN-AMERICAN Spanish-surname student, parents and grand parents all born in U.S., English and Spanish both used in home.	71	36
6	ANGLO Non-Spanish-surname student, parents and grand parents all born in U. S., English used entirely in home.	56	38
7	ANGLO Non-Spanish-surname student, one or more of parents or grand parents born in country other than Mexico, English used entirely at home.	11	11
	TOTAL	216	163

differences between the groups.[34]

A questionnaire designed to determine many socio-cultural characteristics including those used in the present study was developed by Drs. James G. Anderson, William H. Johnson, and the writer. A set of family interview questions was also developed by this same team and the socioeconomic indices used in this study were based on information from these interviews. Both the questionnaire and the interview questions were administered during the fall of 1967. The first semester English and mathematics grades for these students were collected from school records in the spring of 1968. In addition, the students' scores on the Iowa Test of Basic Skills, which is administered to all seventh and ninth grades by the school guidance department, were collected from school records during the summer of 1968. The administration of the California Short-Form Test of Mental Maturity to all the junior high students in this sample was supervised by the writer during the spring of 1968.

Due to non-responses or uninterpretable responses to some items on the questionnaire, the number of questionnaires that were utilizable for this study was reduced to 126. Due to absences during the administration of the achievement or intelligence tests, a few of these 126 students could not be included in parts of the analysis.

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[34] Anderson and Johnson, op. cit.

The nationality and sex of the students used in the present study are shown in Table II.

III. SCALES USED IN THIS STUDY

The questionnaire administered to the students included questions designed to measure the following socio-cultural characteristics: (1) language usage in the home, (2) self-concept of ability, (3) achievement orientation, (4) family independence training, (5) parental achievement press, and (6) the students' social distance attitudes. The fathers' and mothers' educational levels and the fathers' occupations, which were used as indices of the students' socioeconomic status, were obtained from the family interview questions. A copy of all the questions used in the present study is given in Appendix A. In the following section of this chapter the methods of developing the scales from these questions are described.

Socioeconomic Status.

Three indices of socioeconomic status were employed: the father's educational level, his occupation, and the mother's educational level. The information for these indices was obtained from the family interview schedule and coded as shown in Table III.

Language Background.

Three questions from the student questionnaire were

TABLE II

BACKGROUND AND SEX OF STUDENTS IN THE STUDY

	MALE	FEMALE	TOTAL
MEXICAN-AMERICAN	46	41	87
ANGLO-AMERICAN	17	22	39
TOTAL	63	63	126

TABLE III

SOCIOECONOMIC STATUS INDICES

FATHER'S EDUCATIONAL LEVEL	
CODE	
0	Never Went to School
1	Some Grade School
2	Finished Grade School
3	Some High School
4	Graduated from High School
5	Attended Trade or Technical School
6	Some College
7	Graduated from College

FATHER'S OCCUPATION	
CODE	
0	UNSKILLED LABORER. (such as cannery worker, janitor, general hospital employee, farm laborer, window cleaner, hod carrier, general construction laborer.)
1	SKILLED MANUAL EMPLOYEE. (such as auto body repairman, die maker, fireman, radio-TV repairman, printer, carpenter, welder, butcher and barber.)
2	CLERICAL AND SALES. (such as bank teller, railroad conductor, shipping or warehouse clerk, draftsman, supervisor of maintainance, time keeper.)
3	ADMINISTRATIVE, SMALL BUSINESS AND SEMI-PROFESSIONAL. (such as credit manager, service manager, gas station owner, plumbing contractor, mortician, railroad dispatcher, deputy sheriff.)
4	PROFESSIONAL OR MANAGERIAL. (such as Army Major, lumber yard owner, lawyer, physician, teacher or pharmacist.)

MOTHER'S EDUCATIONAL LEVEL
(Coding identical to Father's Educational Level)

used to assess the language usage in the home. The intercorrelation matrix for these questions is shown in Table IV. A principal components analysis of these questions showed that all loaded on a single component accounting for eighty-eight per cent of the variation. The questions and their loading on this component are shown in Table V.

Factor scores were computed for each student.[35] These scores had a standard deviation of 0.97 and a mean of zero. A score near the positive extreme indicated that English was used predominantly in the home. Since the initial choice of students for the sample ensured that Spanish was the only other language in use, a score near the negative extreme indicated that Spanish was used most of the time at home.

Self-Concept of Ability.

Five questions were used to measure the students' self-concept of ability. Question 35 was used in the *Equality of Educational Opportunity* study, and the other

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[35] The factor scores for this and the subsequent principal components analyses were computed as part of the analysis. The computer program used for this analysis is described in the IBM Manual *1130 Statistical System (1130-CA-06X) User's Manual*, White Plains, New York: International Business Machines Corp., 1967). The program used the short regression method described by H. Harman in *Modern Factor Analysis* (Chicago: University of Chicago Press, 1967), pp. 362-369 to calculate the factor scores.

TABLE IV

LANGUAGE BACKGROUND QUESTIONS INTERCORRELATION MATRIX

	QUESTIONS		
	43	44	45
43	1.000	0.743	0.849
44		1.000	0.874
45			1.000

TABLE V

FACTOR LOADINGS OF LANGUAGE BACKGROUND QUESTIONS

FACTOR LOADING	QUESTION[a]
0.919	43. What language do your parents speak to each other?
0.928	44. What language do you use in talking to your brothers and sisters?
0.986	45. What language do you use in talking to your parents?

[a] Code:

0	English all of the time
1	English most of the time
2	English about half of the time
3	A language other than English most of the time
4	A language other than English all of the time

four were adapted from a study by Brookover.[36] A principal components analysis of the five questions indicated that they all loaded on one common component accounting for seventy-nine per cent of the total variation. The intercorrelation matrix for the questions is shown in Table VI, and the loadings of the questions on the component are shown in Table VII.

Factor scores were computed for each student during this principal components analysis. These scores were distributed with a standard deviation of 0.86 and a mean of zero, and their interpretation is as follows: a negative score indicated the student felt he was of below average ability, while a positive score indicated the opposite.

Achievement Orientation.

Ten questions taken from achievement orientation scales described by Kahl were used in this study.[37] The intercorrelation matrix for these questions is shown in Table VIII. Since some of the correlations were small, the matrix was tested for significance to determine if

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[36] Coleman, *et. al.*, *op. cit.*, p. 281; and Wilbur B. Brookover, *et al.*, *Self-Concept of Ability and School Achievement*, Final report of Cooperative Research Project 845, (East Lansing, Michigan: Office of Research and Publications, Michigan State University, 1962).

[37] Kahl, "Some Measures of Achievement Orientation," *op. cit.*

TABLE VI

SELF-CONCEPT OF ABILITY QUESTIONS INTERCORRELATION MATRIX

	QUESTIONS[a]				
	35	60	61	62	63
35	1.000	0.239	0.208	0.144	0.284
60		1.000	0.581	0.296	0.293
61			1.000	0.441	0.337
62				1.000	0.457
63					1.000

[a] These questions were from the second section of the questionnaire

TABLE VII

FACTOR LOADINGS OF SELF-CONCEPT OF ABILITY QUESTIONS

FACTOR LOADING	QUESTION[a]
-0.363	35. "I feel that I just cannot learn" Code 0 Never 1 Seldom 2 Sometimes 3 Most of the time 4 Always
-0.681	60. How do you rate yourself in school ability compared with your closest friends? Code 0 I am among the best 1 I am above average 2 I am average 3 I am below average 4 I am among the poorest
-0.736	61. How do you rate yourself in school ability compared to all other people your age? Code 0 I am among the best 1 I am above average 2 I am average 3 I am below average 4 I am among the poorest
-0.607	62. Do you think you have the ability to complete high school? Code 0 Yes, definitely 1 Yes, probably 2 I don't know 3 Probably not 4 Definitely not
-0.592	63. Do you think you have the ability to complete college? Code 0 Yes, definitely 1 Yes, probably 2 I don't know 3 Probably not 4 Definityly not

[a] Questions were all from the second section of the questionnaire.

TABLE VIII

ACHIEVEMENT ORIENTATION QUESTIONS INTERCORRELATION MATRIX

	QUESTIONS[a]									
	56	57	58	59	60	61	62	63	64	65
56	1.000	-0.079	0.324	0.028	0.005	-0.018	0.138	0.037	0.032	0.133
57		1.000	-0.123	0.325	-0.128	0.165	-0.182	0.109	0.110	-0.054
58			1.000	0.084	0.036	0.104	0.047	-0.039	0.077	-0.030
59				1.000	-0.175	0.283	-0.312	0.143	-0.073	-0.214
60					1.000	-0.204	0.183	-0.254	0.088	0.108
61						1.000	-0.256	0.301	-0.166	-0.147
62							1.000	-0.065	0.198	0.249
63								1.000	0.030	-0.008
64									1.000	0.129
65										1.000

[a] Questions are from the first section of the questionnaire.

there were significant interrelations among the responses to the ten questions. This statistical test for complete independence (i.e. that the sample was drawn from a population in which the correlations between the ten questions was in fact zero) can most conveniently be stated in matrix form. The null hypothesis is $R = I$, and is tested against the alternative $R \neq I$, where R is the intercorrelation matrix and I is the identity matrix with ones on the major diagonal and zeros elsewhere.

The statistic for this test is:

$$X^2 = -(N - 1 - \frac{2p+5}{6}) \ln |R|$$

where

N is the number of observation vectors

p is the number of variables (questions)

$|R|$ is the determinant of the correlation matrix of the p questions.

This statistic is tested against the tabled value of the chi square distribution with $\frac{1}{2}p(p - 1)$ degrees of freedom.[38] This test yielded a chi square value of 144.42 with 45 degrees of freedom. Since this is well beyond the tabled chi square value of 80.1 required for rejection of the null hypothesis at the 0.001 level of significance, the null hypothesis of no interrelations is resoundingly rejected.

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[38] Donald F. Morrison, Multivariate Statistical Methods (New York: McGraw Hill Book Co., 1967), p. 113.

A principal components analysis of these ten questions assessing the students' achievement orientation showed there were four underlying components that accounted for fifty-nine per cent of the variation. Table IX shows the results of the principal components analysis using the Varimax rotation and retaining all components with eigenvalues greater than one.[39]

To estimate how stable or reliable these four factors were, the students were divided into two halves on an odd-even basis, and separate principal components analyses were run for each half. Such an approach was suggested by Armstrong and Soelberg.[40] According to Cliff and Hamburger, the sampling error of factor loadings have a root mean squared sampling error of approximately $1/\sqrt{N}$.[41] Using this estimate, the factor loadings for each half had a sampling error of $1/\sqrt{63}$ or 0.13.

The two resulting factor loading matrices were compared by calculating a coefficient of congruence

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[39] H. F. Kaiser, "The Varimax Criterion for Analytic Rotation in Factor Analysis," Psychometrika, XXIII (1958), pp. 187-200.

[40] J. Scott Armstrong and Peer Soelberg, "On the Interpretation of Factor Analysis," Psychological Bulletin, LXX (November, 1968), pp. 361-364.

[41] Norman Cliff and Charles D. Hamburger, "The Study of Sampling Errors in Factor Analysis by Means of Artificial Experiments," Psychological Bulletin, LXVIII (December, 1967), pp. 430-445.

TABLE IX

ORTHOGONAL FACTOR MATRIX (VARIMAX ROTATION) FOR ACHIEVEMENT ORIENTATION QUESTIONS

	FACTOR NUMBER				
QUESTION	I	II	III	IV	COMMUNALITY
56	-0.0868	0.7557	-0.1878	0.0203	0.6144
57	-0.1579	-0.1708	0.2573	-0.7562	0.6923
58	0.0821	0.8348	0.1071	0.0205	0.7156
59	-0.2222	0.1827	0.5987	-0.4159	0.6142
60	0.6516	0.0705	-0.1292	-0.0193	0.4466
61	-0.5852	0.1457	0.3852	-0.0018	0.5122
62	0.1640	0.1383	-0.6910	0.0300	0.5246
63	-0.8048	-0.0009	-0.1424	-0.1065	0.6794
64	0.1566	0.1047	-0.4131	-0.6680	0.6524
65	-0.0677	0.0330	-0.6688	-0.0766	0.4589
CUMULATIVE PER CENT OF TRACE	21.9	36.0	48.2	59.1	

between each of the factors. This coefficient is defined by Harman as:

$$\psi_{pq} = \frac{\sum_{j=1}^{n} {}_1a_{jp} \cdot {}_2a_{jq}}{\sqrt{\left(\sum_{j=1}^{n} {}_1a^2_{jp}\right)\left(\sum_{j=1}^{n} {}_2a^2_{jq}\right)}}$$

This compares factor p of half one with factor q of half two. The prefixes 1, 2 distinguish the factor weights (a_j 's) for half one or half two, and n is the number of items or variables in each half.[42]

This coefficient of congruence can have values ranging from -1.0 to 1.0, where a value near zero indicates that factor p from the first half and factor q from the second half have loading patterns that are not at all similar, and values near minus or plus one indicate that those two factors have loading patterns that are similar. There is no statistical test on how near one the absolute value of this coefficient should be in order to say the loading patterns of two factors are similar. This writer has arbitrarily chosen an absolute value of 0.80 or more as indicating a good degree of similarity.

The coefficients of congruence for the two halves of the students on the Achievement Orientation questions are shown in Table X. The reader will note that component

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[42] Harry H. Harman, Modern Factor Analysis (Chicago: University of Chicago Press, 1967), p. 270.

TABLE X

COEFFICIENTS OF CONGRUENCE, ACHIEVEMENT ORIENTATION QUESTIONS

	COMPONENTS FROM FIRST HALF[a]			
COMPONENTS FROM SECOND HALF	1	2	3	4
1	0.776	0.078	0.571	0.371
2	0.057	0.878	-0.024	0.090
3	0.437	0.053	-0.658	-0.153
4	0.570	0.000	0.489	-0.410

[a] Underlined values indicate components having the same loading patterns.

one appears to be the most stable, and that components three and four are not as stable as the first two components.

Tables XI, XII, XIII and XIV present the four components of achievement orientation. Each component is presented separately along with the questions having primary loadings on that component. The names of these components were based on the content of the questions having the highest loading for that particular component.

Four factor scores (one for each component) were computed for each student. These factor scores were all distributed with a standard deviation of 0.8 and a mean of zero. The interpretation of each of these sets of factor scores is as follows.

Component I: Fatalism versus activism. This first component indicated how the student felt about his environment. A student with a negative score indicated he had a fatalistic, present-time oriented outlook, while a positive score indicated he had an activistic, future-time oriented outlook.

Component II: Occupational primacy. This second component indicated the student's outlook on vocational success. A negative score indicated a feeling that one's vocational success is an important part of his life, while a positive score indicated the opposite.

TABLE XI

ACHIEVEMENT ORIENTATION, COMPONENT I: FATALISM VERSUS ACTIVISM

FACTOR LOADING	QUESTION
0.652	60. When a man is born the success he is going to have is already in the cards so he might as well accept it and not fight against it. Code 0 Strongly agree 3 Disagree 1 Agree 4 Strongly disagree 2 Undecided
-0.585	61. Nowadays with world conditions the way they are the wise person lives for today and lets tomorrow take care of itself. Code 0 Strongly disagree 3 Agree 1 Disagree 4 Strongly agree 2 Undecided
-0.805	63. With things as they are today an intelligent person ought to think only about the present without worrying about what is going to happen tomorrow. Code 0 Strongly disagree 3 Agree 1 Disagree 4 Strongly agree 2 Undecided

TABLE XII

ACHIEVEMENT ORIENTATION, COMPONENT II: OCCUPATIONAL PRIMACY

FACTOR LOADING	QUESTION
0.756	56. The most important purpose of the public schools is to prepare people for success in jobs. Code 0 Strongly agree 1 Agree 2 Undecided 3 Disagree 4 Strongly disagree
0.835	58. The job should come first, even if it means sacrificing time from recreation Code 0 Strongly agree 1 Agree 2 Undecided 3 Disagree 4 Strongly disagree

TABLE XIII

ACHIEVEMENT ORIENTATION, COMPONENT III: PLANNING AHEAD VERSUS PASSIVE ACCEPTANCE

FACTOR LOADING	QUESTION
0.599	59. Planning only makes a person unhappy since your plans hardly ever work out anyhow. Code 0 Strongly disagree 3 Agree 1 Disagree 4 Strongly agree 2 Undecided
-0.691	62. Making plans only brings unhappiness because the plans are hard to fulfill. Code 0 Strongly agree 3 Disagree 1 Agree 4 Strongly disagree 2 Undecided
-0.669	65. It is important to make plans for one's life and not just accept what comes. Code 0 Strongly disagree 3 Agree 1 Disagree 4 Strongly agree 2 Undecided

TABLE XIV

ACHIEVEMENT ORIENTATION, COMPONENT IV: STRIVING ORIENTATION

FACTOR LOADING	QUESTION
-0.756	57. The best way to judge a man is by his success in his job. Code 0 Strongly disagree 1 Disagree 2 Undecided 3 Agree 4 Strongly agree
-0.668	64. The secret of happiness is not expecting too much out of life and being content with what comes your way. Code 0 Strongly agree 1 Agree 2 Undecided 3 Disagree 4 Strongly disagree

Component III: Planning ahead versus passive acceptance. This component indicated the student's feelings as to how much control he has over his future if he plans ahead, i.e. how beneficial planning ahead seemed to him. A negative factor score indicated a strong feeling that one should plan ahead and not just accept what comes. A positive score indicated a passive, accept what tomorrow brings attitude.

Component IV: Striving orientation. This last component of achievement orientation was the most difficult to interpret. It appeared to be a striving, "get ahead" attitude. A negative factor score indicated a feeling that striving to get ahead was important, while a positive score indicated the opposite.

Independence Training.

The questions used to assess the parents' independence training patterns were obtained from a study by Elder, who reported these questions formed a Guttman scale.[43] The writer submitted these questions to a Guttman scale analysis as described by Edwards,[44] and found the codes Elder had used for the responses produced an adequate Guttmen scale for this sample of students.

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[43] Elder, *op. cit.*, pp. 74-75.

[44] Allen L. Edwards, *Techniques of Attitude Scale Construction* (New York: Appleton-Century-Crofts, 1957).

Two sets of questions were used in the student questionnaire to determine the parents' independence training patterns. Questions one through five (second section of questionnaire) determined the father's independence training, and questions six through ten determined the mother's. The sets were identical except for the interchanging of "mother or stepmother" for "father or stepfather." The questions and the codes for the responses are shown in Table XV.

The independence training score for each parent was obtained by summing the coded responses for the five questions, and ranged from zero to five. The two parents' scores were summed to obtain a total independence training score for the students' parents, ranging from zero to ten. A score of zero for a parent is interpreted as non-democratic child-rearing practices, while a score of five indicated democratic practices designed to train the child to make independent, responsible decisions.

With the responses coded as indicated in Table XV, the coefficient of reproducibility as defined by Edwards was 0.74 for a random sample of one hundred students.[45] This was not as high as the 0.85 recommended by Guttman for a true scale, but it did meet his description of a

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[45] Edwards, op. cit., pp. 184-188.

TABLE XV

INDEPENDENCE TRAINING QUESTIONS[a]

1. In general, how are most decisions made between you and your father or stepfather?

Code	
0	He just tells me what to do
1	He listens to me, but makes the decision himself
1	I have considerable opportunity to make my own decisions but he has the final word
1	My opinions are as important as his in deciding what I should do
1	I can make my own decisions but he would like me to consider his opinion
0	I can do what I want regardless of what he thinks

2. Does he let you have more freedom to make your own decisions and to do what you want than he did two or three years ago?

Code	
1	Much more
1	A little more
0	About the same
0	A little less
0	Much less

3. When you don't know why he makes a particular decision or has certain rules for you to follow, will he explain the reason?

Code	
0	Never
0	Once in a while
0	Sometimes
1	Usually
1	Always

4. When you don't know exactly why he is going to punish or discipline you, will he explain the reason to you?

Code	
1	Always
1	Almost always
0	Usually
0	Sometimes
0	Very seldom

5. How often does he discipline or punish you by reasoning with you, explaining, or talking to you?

Code	
1	Very often
1	Frequently
0	Once in awhile
0	Very seldom
0	Never

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[a] Questions from second section of Questionnaire

quasi-scale. According to Guttman,

> Quasi-scales differ from perfect scales in two respects: (1) reproducibility is substantially imperfect, and (2) the errors of reproducibility have some definite law of deviation about but a single underlying quantitative (scale) variable.[46]

Achievement Press.

These eight questions assessing the various school related pressures parents exert on students were based on questions used by Elder.[47] The intercorrelation matrix for these questions is shown in Table XVI.

An orthogonal principal components analysis of the responses to these questions indicated that there were four underlying components with eigen values greater than one. These four components accounted for seventy-eight per cent of the total variation in the responses. The results of this principle components analysis are shown in Table XVII.

Each component, along with the questions having a primary loading on that component, is presented separately in Tables XVIII, XIX XX and XI. The names of these components were based on the content of the questions having the highest loading on that particular component.

Factor scores for each component were calculated

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[46] Louis Guttman, "On Smith's Paper on 'Randomness of Error' in Reproducable Scales," Educational and Psychological Measurement, XIII (Autumn, 1953), p. 505.

[47] Elder, op. cit., pp. 85-89.

TABLE XVI

ACHIEVEMENT PRESS QUESTIONS INTERCORRELATION MATRIX

	QUESTIONS[a]							
	18	19	20	21	23	25	26	27
18	1.000	0.123	0.089	0.054	0.387	0.136	0.029	-0.078
19		1.000	0.056	0.191	-0.001	0.301	0.019	-0.194
20			1.000	0.252	0.131	-0.039	0.719	-0.188
21				1.000	0.104	-0.076	0.219	-0.745
23					1.000	0.072	0.154	-0.108
25						1.000	-0.015	0.053
26							1.000	-0.210
27								1.000

[a] Questions are from the first section of the questionnaire.

TABLE XVII

ORTHOGONAL FACTOR MATRIX (VARIMAX ROTATION) FOR ACHIEVEMENT PRESS QUESTIONS

	FACTOR NUMBER				
QUESTION	I	II	III	IV	COMMUNALITY
18	0.0135	-0.8181	0.0313	0.1600	0.6962
19	-0.0015	0.0260	0.2703	0.7908	0.6992
20	-0.9131	-0.0663	0.1236	0.0071	0.8536
21	-0.1454	-0.0402	0.9122	0.0201	0.8554
23	-0.1187	-0.8342	0.0615	-0.0600	0.7174
25	0.0012	-0.1247	-0.1846	0.8099	0.7057
26	-0.9213	-0.0455	0.1077	-0.0070	0.8625
27	0.0958	0.0653	-0.9151	-0.0378	0.8524
CUMULATIVE PER CENT OF TRACE	28.7	46.8	63.8	78.0	

TABLE XVIII

ACHIEVEMENT PRESS, COMPONENT I: PARENTAL PRESSURE TO GET GOOD GRADES

FACTOR LOADING	QUESTION
-0.913	20. How much does he (father) want you to get good grades? Code 0 He puts a lot of pressure on me 1 He gets after me frequently 2 He urges me to do well once in awhile 3 He lets me do as I please 4 Doesn't care
-0.921	26. How much does she (mother) want you to get good grades? Code 0 She puts a lot of pressure on me 1 She gets after me frequently 2 She urges me to do well once in awhile 3 Lets me do as I please 4 Doesn't care

TABLE XIX

ACHIEVEMENT PRESS, COMPONENT II: AMOUNT OF PARENTAL HELP WITH SCHOOLWORK

FACTOR LOADING	QUESTION
-0.818	18. How much help does he (father) give you with your school work? Code 0 Almost everytime I ask 1 Most of the time 2 About half the time 3 Once in awhile 4 Never
-0.834	23. How often does she (mother) helf you with your school work? Code 0 Almost everytime I ask 1 Most of the times I ask 2 About half the time 3 Once in awhile 4 Never

TABLE XX

ACHIEVEMENT PRESS, COMPONENT III: PARENTS' DESIRE THAT THE STUDENT GO TO COLLEGE

FACTOR LOADING	QUESTION
0.912	21. How much does he (father) want you to attend college? Code 0 Insists that I go 1 Wants me to go, but lets me decide 2 Doesn't care 3 Rather that I didn't but will let me go if I want to 4 Won't let me go
-0.915	27. How much does she (mother) want you to attend college? Code 0 Won't let me go 1 Rather that I didn't but will let me go if I want to 2 Doesn't care 3 Wants me to go, but lets me decide 4 Insists that I go

TABLE XXI

ACHIEVEMENT PRESS, COMPONENT IV: PARENTAL PRESSURE TO COMPLETE HIGH SCHOOL

FACTOR LOADING	QUESTION
0.791	19. How much does he (father) want you to finish high school? Code 0 Insists that I go 1 Wants me to finish, but lets me decide 2 Doesn't care 3 Rather that I didn't, but will let me finish if I want to 4 Won't let me finish high school
0.810	25. How much does she (mother) want you to finish high school? Code 0 Insists that I go 1 Wants me to finish, but lets me decide 2 Doesn't care 3 Rather that I didn't, but will let me finish if I want to 4 Won't let me finish high school

for each student. All of these factor scores were distributed with a mean of zero and standard deviations slightly less than one. The interpretation of each set of factor scores is as follows.

Component I: Parental pressure to get good grades. A negative factor score on this component indicated that the student reported little or no pressure to get good grades, while a positive score indicated the opposite.

Component II: Amount of parental help with schoolwork. A negative score on this component indicated that the student reported that his parents gave him little or no help with his schoolwork. A positive score indicated the opposite, that he received help whenever he asked for it.

Component III: Parents' desire that the student go to college. This component of achievement press indicated how much the student's parents want him to go to college. A negative score indicated that the student reported that his parents want him to go, and a positive score indicated the opposite.

Component IV: Parental pressure to complete high school. A negative factor score indicated that the student reported that his parents want him to finish high school. A positive score indicated the opposite.

To estimate how reliable these four achievement press components were, the data were randomly split into two halves and separate principal components analyses were computed for each half. The two resulting factor loading matrices were compared by calculating a coefficient of congruence between each of the factors. The formula and interpretation of the coefficient of congruence were presented earlier, in the section on the achievement orientation scales. These coefficients of congruence are shown in Table XXII. Note that even though the components did not come out in the same order in both halves, they had very similar loading patterns.

Social Distance.

Three measures of social distance were obtained from the students: their attitudes toward persons of a different religion, persons from a different country and persons with different first language. The questions used to measure these attitudes are presented in Table XXIII.

Ideally, social distance indicates how 'close' an individual will permit persons of a different background to get to him in social relationships. The closest social relationship is one involving marriage, while the most distant relationship is to permit them into the country. There is an obvious hierarchy here: if a person would permit a person of a different background into a

TABLE XXII

COEFFICIENTS OF CONGRUENCE, ACHIEVEMENT PRESS QUESTIONS

COMPONENTS FROM SECOND HALF	COMPONENTS FROM FIRST HALF[a] 1	2	3	4
1	0.954	-0.091	-0.127	0.230
2	0.308	-0.123	0.043	0.916
3	0.081	-0.976	-0.142	0.160
4	-0.081	0.128	0.965	0.001

[a] Underlined values indicate components having the same loading pattern.

TABLE XXIII

SOCIAL DISTANCE QUESTIONS[a]

---

23. Would you be willing to have as a relative someone whose religion is different from yours?

24. Would you be willing to have as a relative someone who was born in a different country than you were?

25. Would you be willing to have as a relative someone whose first language is different from your first language?

26. Would you be willing to have as a friend someone whose religion is different from yours?

27. Would you be willing to have as a friend someone who was born in a different country than you were?

28. Would you be willing to have as a friend someone whose first language is different from your first language?

29. Would you be willing to have as a neighbor someone whose religion is different from yours?

30. Would you be willing to have as a neighbor someone who was born in a different country than you were?

31. Would you be willing to have as a neighbor someone whose first language is different from your first language?

---

[a] Questions are from second section of questionnaire. Students could respond "Yes" or "No" to each question.

relationship by marriage, he also would permit them to enter into a friendship or neighbor relationship. Table XXIV indicates how the questions would be grouped to form this hierarchy.

A preliminary analysis of the questions grouped in this manner indicated that many students did not differentiate between "friend" and "neighbor". The scale was collapsed to two social relationships: "relative" and "others." The "other" category encompassed both friend and/or neighbor. A "No" to either friend or neighbor or to both was recorded as a "No" to the "other" category.

The social distance expressed toward persons of a particular background was found by summing the number of "No's" for that background. Hence the social distance score for each background could range from zero to two, interpreted:

0 the student indicated no objection to persons of that background being as close as a relative

1 the student would not permit someone of that background as close socially as a relative, and

2 the student would not want a person of that background as close as a friend or neighbor.

All of the scales described in this section were utilized in the analyses described in Chapter IV.

TABLE XXIV

GROUPING OF SOCIAL DISTANCE QUESTIONS[a]

PERSONS OF A DIFFERENT:	BE WILLING TO HAVE AS A: RELATIVE	FRIEND	NEIGHBOR
RELIGION	(yes or no)		
COUNTRY OF BIRTH			
FIRST LANGUAGE			

[a] Note: A "Yes to RELATIVE in a row should be followed by "Yes" for both FRIEND and NEIGHBOR, according to the hierarchy explained in the text.

CHAPTER IV

METHODS OF ANALYSIS AND RESULTS

This chapter presents the results of the analyses testing the hypotheses advanced in Chapter III. Two sets of hypotheses were tested during the present study. The first set was derived from a model of sociocultural change that linked Mexican-American students' sociocultural characteristics to their language background. The second set was derived from an achievement motivation model based on studies by Rosen and others.

The first set of hypotheses predicted that Mexican-American and Anglo students would differ significantly on each of the sociocultural characteristics described in Chapter III. This set of hypotheses also predicted that Mexican-American students from English-speaking backgrounds would have sociocultural characteristics more similar to Anglo students than would Mexican-American students from Spanish-speaking backgrounds.

The second set of hypotheses postulated that high achievement for all the students would be associated with: (1) high self-concept of ability, (2) high achievement orientation, (3) democratic independence training, and (4) high parental achievement pressure. In addition, for Mexican-American students it was hypothesized that high achievement would be associated with an English-speaking background and low social distance attitudes.

Before the findings for these hypotheses are presented, the socioeconomic characteristics of the sample are briefly discussed.

I. SOCIOECONOMIC CHARACTERISTICS OF THE SAMPLE

An examination of the socioeconomic indices obtained for the students indicated that the same disparity in socioeconomic level reported in Chapter I is reflected in this sample. Figures 2, 3 and 4 present histograms of the three socioeconomic indices for the students. Note that all three indices reflect the same pattern: the Mexican-American students generally came from families much lower on the socioeconomic scale. Seventy-five per cent of the Mexican-American students' fathers had no more than an elementary school education, while seventy-two per cent of the Anglo students' fathers had completed high school. Over seventy per cent of the Mexican-American students' fathers were working as unskilled or skilled manual employees while over sixty per cent of the Anglo students' fathers held administrative, semi-professional, professional or managerial positions. Three-fourths of the Mexican-American students' mothers had no more than an elementary school education, whereas slightly less than three-fourths of the Anglo students' mothers had finished high school.

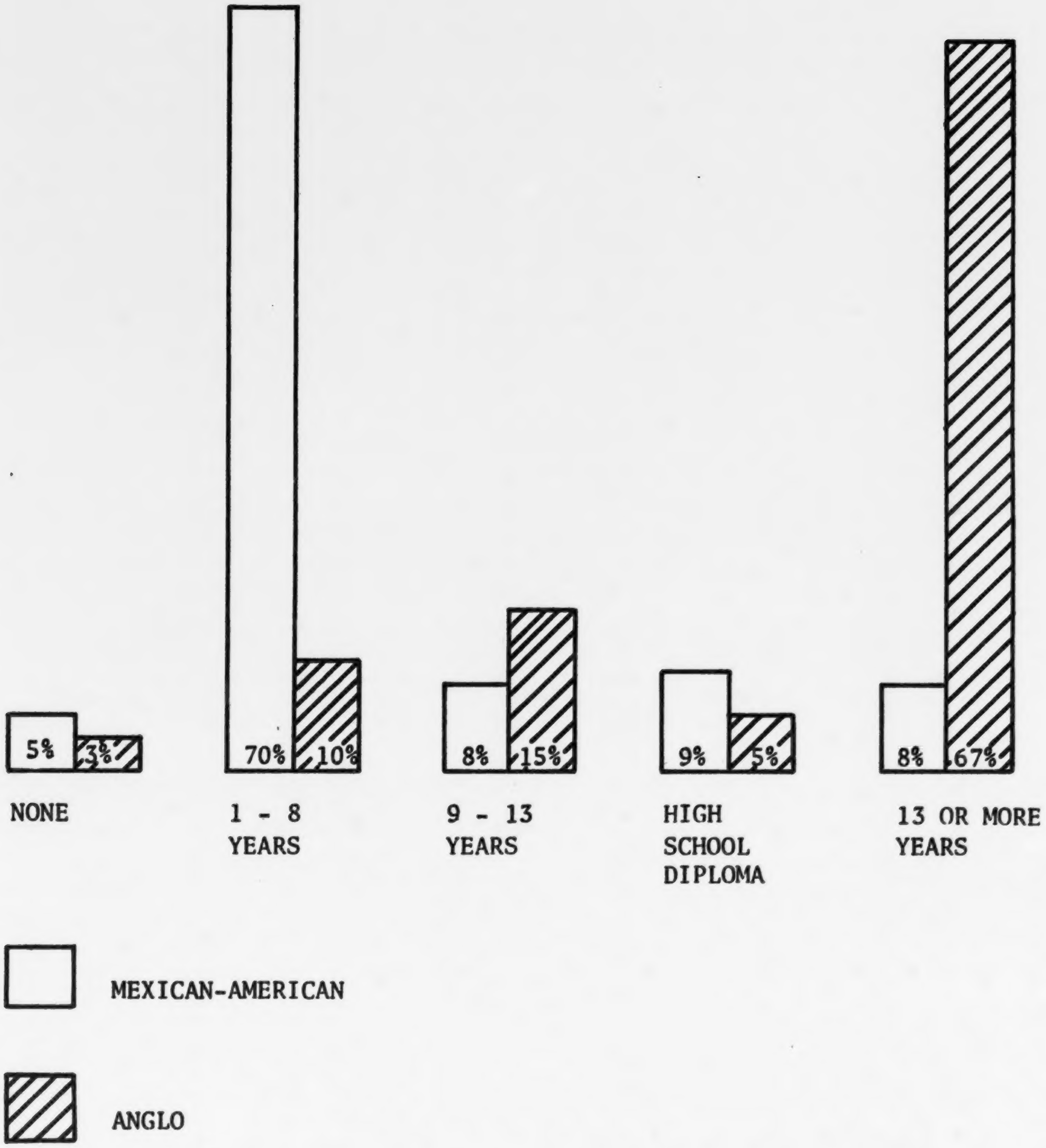

FIGURE 2

SOCIOECONOMIC CHARACTERISTICS OF THE SAMPLE,
FATHER'S EDUCATION

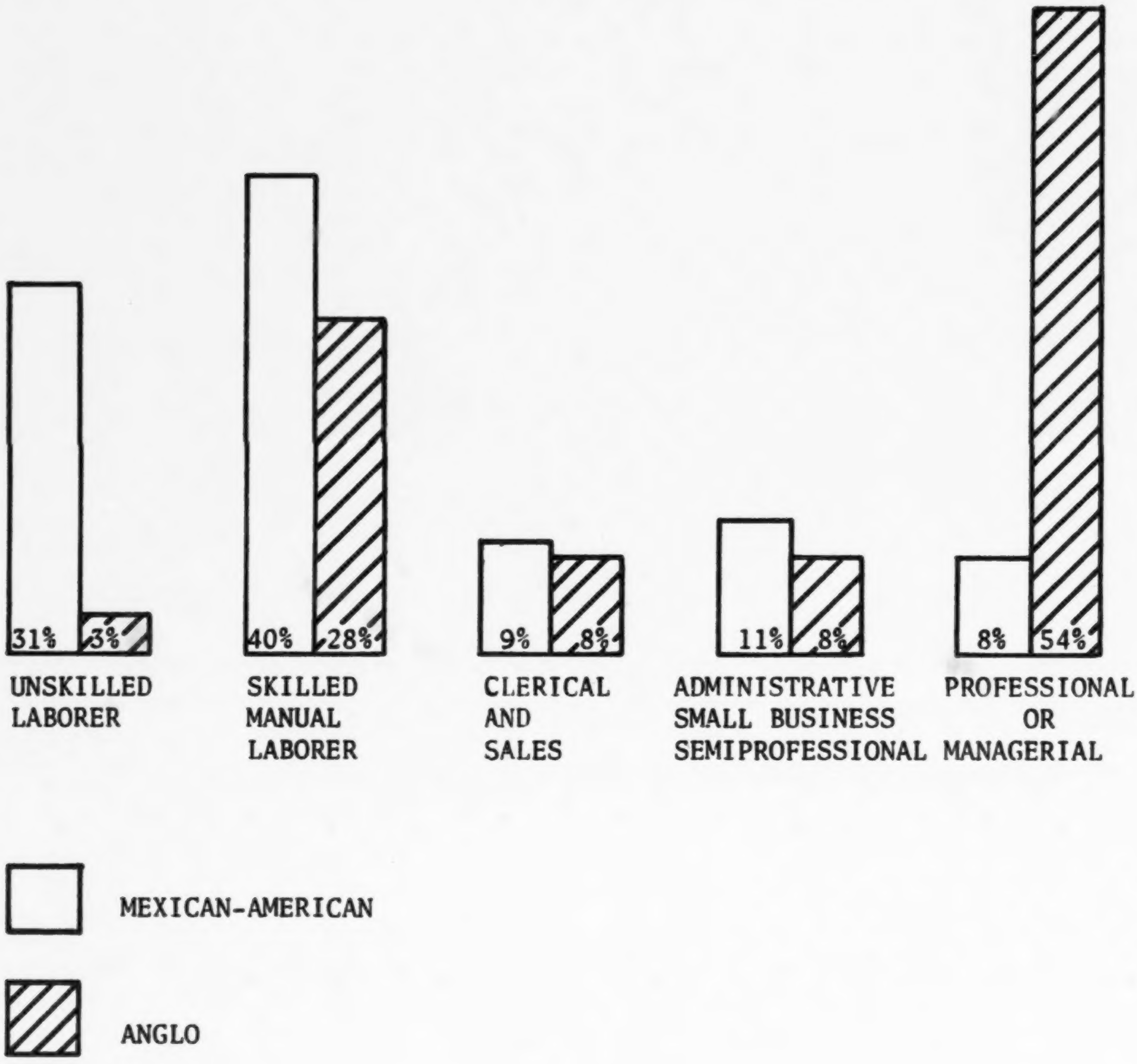

FIGURE 3

SOCIOECONOMIC CHARACTERISTICS OF THE SAMPLE,
FATHER'S OCCUPATION

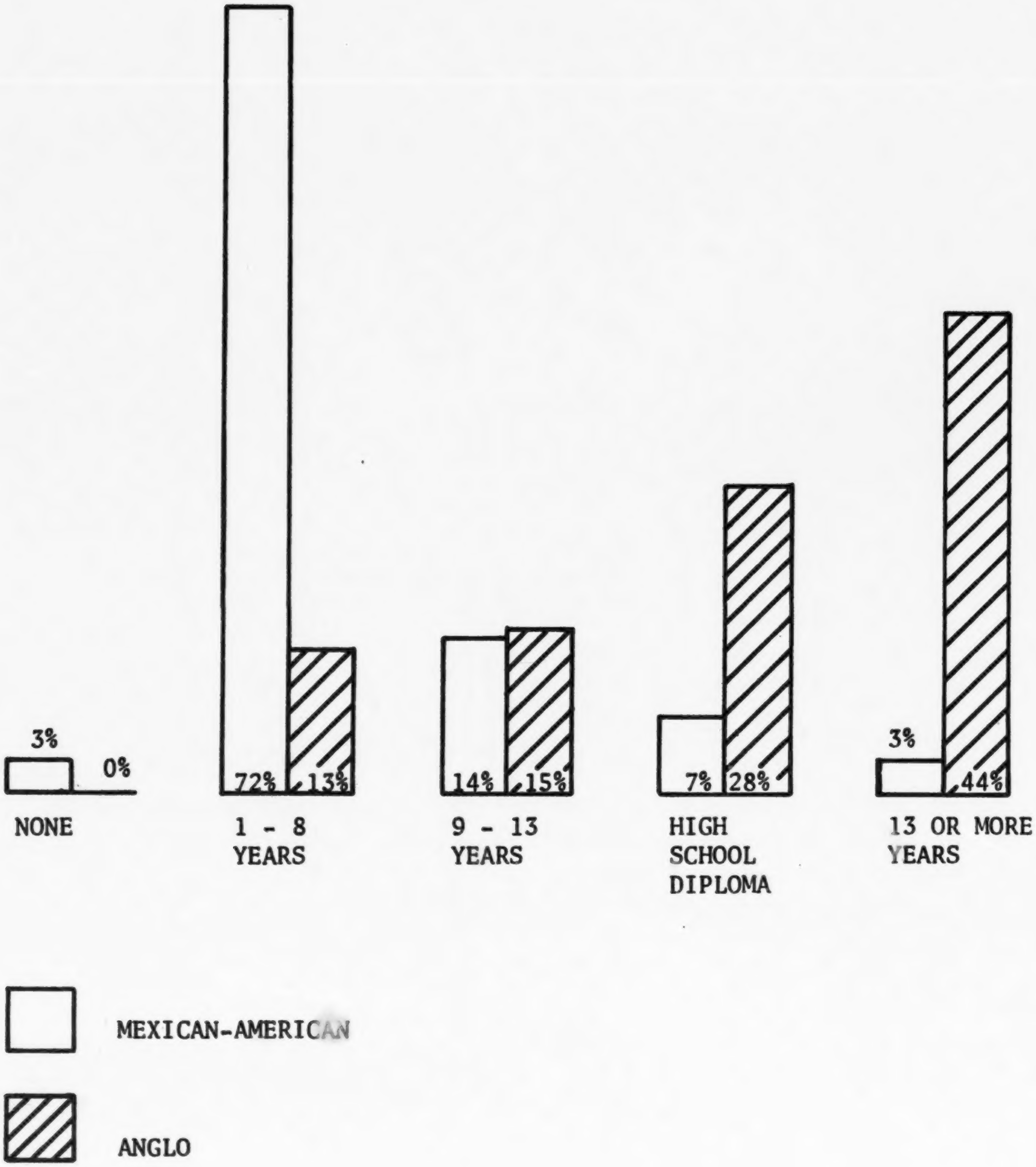

FIGURE 4

SOCIOECONOMIC CHARACTERISTICS OF THE SAMPLE, MOTHER'S EDUCATION

II. HYPOTHESES ABOUT SOCIOCULTURAL CHARACTERISTICS

To test the first three hypotheses advanced in Chapter III a series of univariate analyses of variance were performed. These are described immediately below. To test the fourth hypotheses, that the relation between language background and the sociocultural characteristics would be independent of language, a correlation analysis was performed.

Analyses of Variance.

The analyses of variance were performed by categorizing the students into groups on the basis of sex and their background, using the categories shown in Figure 5. Each measure of the sociocultural characteristics was used in turn as the dependent variable in this two-way analysis of variance design. Students were classified into three background groups: Anglo, Mexican-Americans reporting more English used at home, and Mexican-Americans reporting less English used at home. Division of the Mexican-American students into two groups was accomplished by finding the average language score for all the Mexican-American students (-0.531) and considering all those above this average as being in Group 2. It should be noted that most of the students in Group 2 reported that some Spanish was used at home.

In each instance where a significant main effect

STUDENT BACKGROUND	MALE	FEMALE
GROUP 1 (Anglo)		
GROUP 2 (Mexican-American using more English)		
GROUP 3 (Mexican-American using less English)		

FIGURE 5

CATEGORIES USED IN ANALYSES OF VARIANCE TO TEST HYPOTHESES ABOUT SOCIOCULTURAL CHARACTERISTICS for background was found, post hoc comparisons were run to determine whether Group 1 (Anglos) was significantly different from Group 2 (Mexican-Americans above the average language scale score) and Group 3 (Mexican-Americans below the average language scale score), and whether Group 2 and Group 3 were significantly different from each other.

These comparisons can be written in null hypothesis form:

$$\overline{G}_1 - \overline{G}_2 = 0$$

$$\overline{G}_1 - \overline{G}_3 = 0$$

$$\overline{G}_2 - \overline{G}_3 = 0$$

and tested using Duncan's Multiple Range Test. The general form of Duncan's Multiple Range Test for a balanced analysis of variance design is:

$$(\overline{Y}_i - \overline{Y}_j) \overset{?}{>} (Z\alpha ;\ _{p,\ n_e}) \sqrt{\text{Mean Sq. error}}$$

where $\overline{Y}_i$ and $\overline{Y}_j$ are the averages for groups i and j, Z is the studentized range statistic in Duncan's tables,[1] α is the significance level, p is the number of means in the range chosen, and n_e is the degrees of freedom of the Mean Square error term.

Since the actual analyses of variance involved unequal subclass frequencies, the computations for the analyses of variance were performed by a computer program based on the least squares computational method given by Harvey.[2] The comparisons were done using Kramer's modification of Duncan's Multiple Range Test as formulated by Harvey.[3]

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[1] Recent, more accurate tables of this statistic are given in Rupert G. Miller, Jr., Simultaneous Statistical Inference (New York: McGraw Hill, 1966).

This formulation of Duncan's Multiple Range test is:

$$(\bar{Y}_i - \bar{Y}_j)\sqrt{\frac{2}{C^{ii} \quad C^{jj} \quad 2C^{ij}}} \overset{?}{>} Z(\alpha_{;p,\ n_e})\sqrt{\text{Mean Sq.}_{\text{error}}}$$

where $\bar{Y}_i$ and $\bar{Y}_j$, Z, p, α , n_e are the same as defined on page 8, and C^{ii}, C^{jj} are elements of the inverse of the reduced least squares matrix.

Results.

The complete results of these analyses are shown in Appendix B, and are summarized in Table XXV.

The obvious differences between Mexican-American and Anglo students on the socioeconomic indices shown in Figures 2 - 4 were supported by the results of the analyses of variance. The two groups of Mexican-American students did

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[2] Walter R. Harvey, Least-Squares Analysis of Data with Unequal Subclass Numbers, Agricultural Research Service publication ARS 20-8, (Beltsville, Maryland: U.S. Department of Agriculture, Plant Industry Station, 1960). The computational method was programmed for CDC 3300 computer by Dick Glaze of the NMSU Statistical Laboratory.

[3] Clyde Y. Kramer, "Extension of Multiple Range Tests to Group Correlated Adjusted Means," Biometrics, XIII (March, 1957), pp. 13-18; and Harvey, op. cit., p. 12.

TABLE XXV

RESULTS OF ANALYSES OF VARIANCE, STUDENTS CATEGORIZED BY SEX AND BY LANGUAGE AND ETHNICITY

SCALE	SIGNIFICANT DIFFERENCES WERE FOUND BETWEEN:			
	MALES AND FEMALES	ANGLO AND ENGLISH LANGUAGE MEXICAN-AMERICAN STUDENTS	ANGLO AND SPANISH LANGUAGE MEXICAN-AMERICAN STUDENTS	ENGLISH AND SPANISH LANGUAGE MEXICAN-AMERICAN STUDENTS
1A: FATHER'S EDUCATION	$p < 0.05$	$p < 0.01$	$p < 0.01$	N.S.
1B: FATHER'S OCCUPATION	N.S.	$p < 0.01$	$p < 0.01$	N.S.
1C: MOTHER'S EDUCATION	N.S.	$p < 0.01$	$p < 0.01$	N.S.
3: SELF-CONCEPT OF ABILITY	N.S.	$p < 0.05$	$p < 0.01$	N.S.
4A: FATALISM VERSUS ACTIVISM	N.S.	$p < 0.01$	$p < 0.01$	N.S.
4C: PLANNING AHEAD VERSUS PASSIVE ACCEPTANCE	N.S.	$p < 0.01$	$p < 0.01$	N.S.
4D: STRIVING ORIENTATION	N.S.	$p < 0.05$	$p < 0.01$	N.S.
5A: FATHER'S INDEPENDENCE TRAINING	$p < 0.05$	N.S.	N.S.	N.S.
5B: MOTHER'S INDEPENDENCE TRAINING	N.S.	$p < 0.01$	$p < 0.01$	N.S.
5C: TOTAL INDEPENDENCE TRAINING	$p < 0.05$	N.S.	$p < 0.05$	N.S.
6C: PARENTS' DESIRE THAT THE STUDENT GO TO COLLEGE	$p < 0.05$	N.S.	$p < 0.05$	N.S.
6D: PARENTAL PRESSURE TO COMPLETE HIGH SCHOOL	N.S.	N.S.	N.S.	$p < 0.01$
7A: RELIGIOUS SOCIAL DISTANCE	N.S.	$p < 0.01$	$p < 0.01$	N.S.

not differ significantly on any of the socioeconomic indices.

A survey of the results for the rest of sociocultural characteristics indicated that there were significant differences between the Anglo and Mexican-American students on the following scales:

Scale 3: Self-Concept of Ability,

Scale 4A: Fatalism versus Activism,

Scale 4C: Planning Ahead versus Passive Acceptance,

Scale 4D: Striving Orientation,

Scale 5B: Mother's Independence Training,

Scale 5C: Total Independence Training,

Scale 6C: Parents' Desire that the Student go to College,

Scale 7A: Religious Social Distance.

In all but one case the differences between the Anglo and Mexican-American students were in the direction indicated by the literature. However, one important exception was noted on Scale 4D, which indicated the students' striving orientation. Both groups of Mexican-American students reported a much higher striving orientation than did the Anglo students.

The post hoc comparisons indicated that in all but two instances the Anglo group differed significantly from both groups of Mexican-American students. On Scale 6C (indicating the parents' desire that the student go to college) only Group 3 was significantly different from the Anglos. This indicated that only Mexican-American students from families using little English experienced significantly less parental pressure to go on to college. Similarly, on Scale 5C only group 3 was significantly different from the Anglos. This meant that only the Mexican-American families using little English employed significantly less democratic child-rearing practices than the Anglo families.

The two groups of Mexican-American students did not differ significantly on any of the eight above mentioned scales. However, on Scale 6D a significant difference was found between the two groups of Mexican-American students. On this scale Group 2 reported high parental pressure to complete high school and Group 3 reported significantly less pressure. The Anglo group reported moderate parental pressure to complete high school, but did not differ significantly from either group of Mexican-American students.

Summary

Significant differences between the Mexican-American and Anglo students were found for eight scales. Of these, six supported the descriptions of the Mexican-American students, when compared to their Anglo peers, were found to have significantly lower self-concepts of their ability, to be fatalistic and passive, and to experience less democratic child-rearing practices in their homes. Mexican-American students in this sample also were less willing to associate with persons of a different religious background than their Anglo peers.

One finding contradicted statements in the literature concerning the achievement motivation of Mexican-American students. Mexican-American students were found to have a higher striving orientation than their Anglo peers. No significant differences were found between the two cultural groups on one of the achievement orientation scales, and on three of the family achievement pressure scales.

Support for the hypothesis linking sociocultural characteristics to language was clearly provided by only one finding. On the parental pressure to complete high school scale Mexican-American students from families using more English reported somewhat more pressure than Anglo students and significantly more pressure than the other Mexican-American students.

On three of the scales significant differences were found between males and females, regardless of their ethnic background. Girls reported more democratic practices as measured by Scale 5A: Father's Independence Training, and Scale 5C: Total Independence Training. Girls also reported less pressure to attend college

(Scale 6C) than did boys.

In no instance was a significant interaction between ethnic background and sex detected.

Correlation Analysis.

It was hypothesized that Mexican-American students from predominantly English-speaking backgrounds would have sociocultural characteristics more similar to the Anglo students than would those students from predominantly Spanish-speaking backgrounds. It was further hypothesized that this relationship between language background and sociocultural characteristics would be independent of socioeconomic status.

Some writers, such as Ulibarri, have contended that fatalistic, present-time orientations are the outcomes of the depressed socioeconomic status of Mexican-Americans, rather than being cultural characteristics *per se*.[4] This contention is given further support by the culture of poverty concept of Lewis.[5] In order to examine this thesis, the interrelations of the socioeconomic indices, language, and sociocultural characteristics were examined. A partial correlation analysis was undertaken to determine the relationship of language to these characteristics, independent of socioeconomic status; and to determine the relationship of socioeconomic status to these characteristics, independent of language.

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[4] Ulibarri, "Cultural Differences and the Education of Spanish-American," *op. cit.*

[5] Lewis, *op. cit.*

The product-moment correlations between language, the three measures of socioeconomic status, and the sociocultural characteristics are presented in Table XXVI. Language background correlated significantly with all three of the socioeconomic status indices. This indicated that families from a higher socioeconomic status tended to use more English. In addition, correlations between language and two of the sociocultural characteristics were in the predicted direction and were significant. These were: Scale 6B: Amount of Parental help with Schoolwork (0.36), and Scale 6D: Parental Pressure to Complete High School (-0.27). The correlations between language and seven other scales were in the predicted direction, but were not significant at the 0.05 level. In two cases the observed correlations between language and the scales were quite small (0.02) and were opposite to the predicted direction.

Four of the scales correlated significantly with the father's educational level, namely: Father's Independence Training (0.22), Total Independence Training (0.22), Amount of Parental Help with Schoolwork (0.21), and Religious Social Distance (-0.29). One scale, Parental Pressure to get Good Grades, correlated significantly

TABLE XXVI

CORRELATIONS BETWEEN LANGUAGE, SOCIOECONOMIC STATUS INDICES AND MEASURES OF SOCIOCULTURAL CHARACTERISTICS OF MEXICAN-AMERICAN STUDENTS

SCALE	LANGUAGE	FATHER'S EDUCATION	FATHER'S OCCUPATION	MOTHER'S EDUCATION
SES INDICES				
1A: Father's Education	0.27•	1.00	0.59•	0.57•
1B: Father's Occupation	0.21•	0.59•	1.00	0.53•
1C: Mother's Education	0.33•	0.57	0.53•	1.00
SOCIOCULTURAL CHARACTERISTICS				
3: Self-Concept of Ability	0.09	0.09	0.03	0.04
4A: Fatalism versus Activism	-0.02#	-0.11	-0.04	-0.16
4B: Occupational Primacy	-0.10	-0.05	0.01	0.04
4C: Planning Ahead versus Passive Acceptance	-0.10	0.04	-0.11	-0.11
4D: Striving Orientation	0.02#	0.10	0.10	0.07
5A: Father's Independence Training	0.13	0.22•	0.04	-0.04
5B: Mother's Independence Training	0.05	0.17	0.04	0.02
5C: Total Independence Training	0.10	0.22•	0.04	-0.01
6A: Parental Pressure to get Good Grades	0.02	0.16	0.23•	0.03
6B: Amount of Parental Help With Schoolwork	0.36•	0.21•	0.09	0.14
6C: Parents' Desire that the Student go to College	-0.18	0.04	0.04	-0.01
6D: Parental Pressure to Complete High School	-0.27•	-0.14	0.07	-0.07
7A: Religious Social Distance	-0.15	-0.29•	-0.09	-0.07
7B: Nationality Social Distance	-0.04	0.03	0.13	0.08
7C: Language Social Distance	-0.04	-0.17	-0.18	0.07

•Correlation is significant at the 0.05 level.

# Denotes a correlation opposite to the predicted direction.

with Father's Occupation, and none correlated significantly with Mother's Education.

The direction of these correlations indicated that Mexican-American students from families of a higher socioeconomic status had characteristics similar to those of the Anglo students.

Partial correlation analyses were performed for any significant zero order correlation between the sociocultural characteristics and language or socioeconomic status. Results of these analyses are presented in Table XXVII. These analyses indicated that the relationship between Parental Help with Schoolwork and Language was not markedly reduced when either Father's Education or Father's Occupation was held constant. The significant correlation between Father's Education and this scale is partially due to the correlation between Language and Father's Education, as the correlation between this scale and Father's Education was reduced from 0.21 to 0.13 when Language was held constant. Also, the correlation between Language and Parental Pressure to Complete High School was not markedly reduced when either Father's Education or Father's Occupation was held constant.

The partial correlation analysis to determine the relationship between the socioeconomic indices and the sociocultural characteristics, independent of language background, indicated that the relationships between both

TABLE XXVII

PARTIAL CORRELATION ANALYSIS[a]

	CORRELATION WITH LANGUAGE			CORRELATION WITH FATHER'S EDUCATION		CORRELATION WITH FATHER'S OCCUPATION	
Scale[b]	ZERO ORDER	FATHER'S EDUCATION HELD CONSTANT	FATHER'S OCCUPATION HELD CONSTANT	ZERO ORDER	LANGUAGE HELD CONSTANT	ZERO ORDER	LANGUAGE HELD CONSTANT
5A	N.S.	-	-	0.22	0.19	N.S.	-
5C	N.S.	-	-	0.22	0.20	N.S.	-
6A	N.S.	-	-	N.S.	-	0.23	0.23
6B	0.36	0.32	0.35	0.21	0.13	N.S.	-
6D	-0.27	-0.24	-0.29	N.S.	-	N.S.	-
7A	N.S.	-	-	-0.29	-0.26	N.S.	-

[a] Performed only for zero order correlations significantly different from zero

[b] Key:

5A: Father's Independence Training
5C: Total Independence Training
6A: Parental Pressure to get good Grades
6B: Amount of Parental Help with Schoolwork
6D: Parental Pressure to Complete High School
7A: Religious Social Distance

the Father's Independence Training scale and the Total Independence Training scale were not reduced markedly when Language was held constant. Moreover, the correlation between Father's Occupation and Parental Pressure to get Good Grades was not reduced when Language was held constant. Furthermore, the correlation between Religious Social Distance and Father's Education was not substantially reduced when Language was held constant. Thus, the relationship between all four of these sociocultural characteristics and socioeconomic status was independent of language usage in the home.

The correlation between Father's Education and Parental Help with Schoolwork, however, was reduced from 0.21 to 0.13 when Language was held constant. This reduction indicated that the observed correlation between these two scales was in part due to the correlation between Scale 6B and Language and the correlation between Language and Father's Education.

Summary.

The correlation analysis found two significant correlations between language background and the sociocultural characteristics scales. These two scales were Amount of Parental Help with Schoolwork and Parental Pressure to Complete High School. Both of these relationships were independent of the socioeconomic level of the family.

Five significant correlations between socioeconomic status indices and the scales were found. Four of these correlations were independent of language usage in the home and one was at least partially related to language usage. The four scales whose relationships to socioeconomic status were independent of language were Father's Independence Training, Total Independence Training, Parental Pressure to get Good Grades, and Religious Social Distance. The correlation between Parental Help with Schoolwork and socioeconomic status, however, was not independent of language background.

The model of sociocultural change linking language background to the sociocultural characteristics received support on only two of the fifteen measures, indicating this model was inadequate. Four of the fifteen measures of the characteristics were related to socioeconomic status, independent of language background, and one more was significantly related to socioeconomic status and was also related to language. Thus, socioeconomic factors may be important to sociocultural change, and should be incorporated into the model.

III. HYPOTHESES ABOUT ACHIEVEMENT AND SOCIOCULTURAL CHARACTERISTICS

The second set of hypotheses tested were derived from the achievement motivation model described in

Chapter III. For both Mexican-American and Anglo students, it was hypothesized that high achievement would be associated with the following characteristics: (1) high self-concept of ability, (2) high achievement orientation, (3) democratic independence training, and (4) high parental achievement pressure. In addition, for Mexican-American students it was hypothesized that high achievement would be associated with an English-speaking background and low social distance attitudes. The complete culturally based achievement motivation model was presented in Figure 1 in Chapter III.

Achievement Measures.

Three sets of achievement measures were employed in the present study: English and mathematics grades at the end of the first semester, standardized achievement test scores in language and arithmetic, and non-language intelligence test scores.

English and mathematics grades. English and mathematics grades were collected from the school records at the end of the first semester in January, 1968. The letter grades assigned by the teachers were coded numerically, using the following conversion:

A - 4
B - 3
C - 2
D - 1
F - 0

Achievement test scores. The Las Cruces public school system regularly administers the Iowa Test of Basic Skills to all of the seventh and ninth grade students during the spring of each year. Grade placement scores are recorded in the students' permanent record folders. The Language Skills and Arithmetic Skills grade placement scores were collected for all the seventh and ninth grade students in the sample at the end of the 1968 school year. These grade placement scores were converted to standard scores with a mean of fifty and a standard deviation of ten. This made the students' achievement scores directly comparable to each other even when the students were from different grade levels. Table XXVIII indicates the relationship between standard scores and spring grade placement scores for the seventh and ninth grade students.

Non-language intelligence test scores. The California Short-Form Test of Mental Maturity, 1963 revision, was administered under the writer's supervision during April, 1968 to the students in this study. Due to scheduling difficulties in the schools, time was not available to administer the whole test which yields both a Non-Language and a Language IQ score as well as a Total IQ score. Therefore, only the Non-Language section (Tests 1 - 4) was administered.

TABLE XXVIII

CONVERSION FROM STANDARD SCORES TO GRADE PLACEMENT SCORES

	SEVENTH GRADE		NINTH GRADE	
STANDARD SCORE	LANGUAGE SKILLS	ARITHMETIC SKILLS	LANGUAGE SKILLS	ARITHMETIC SKILLS
65	10.4	9.5	12.0	11.5
60	9.5	8.9	11.1	10.8
55	8.7	8.4	10.3	10.1
50	7.8	7.8	9.4	9.4
45	6.9	7.2	8.5	8.7
40	6.1	6.7	7.7	8.0
35	5.2	6.1	6.8	7.3

The intelligence test scores were considered to be a generalized measure of achievement in the present study. Humphreys indicated that tests of intelligence and tests of academic achievement differ only in degree. In his opinion, intelligence tests assess the results of incidental learning, generally distant in time from that of testing, while achievement tests assess the results of learning in specific educational situations near in time to the testing.[6] The Equality of Educational Opportunity study used tests of verbal ability as a measure of achievement, stating: "Ability tests are simply broader and more general measures of education, while achievement tests are narrower measures directed to a restricted subject area."[7]

To determine the interrelation of these various measures of achievement, product-moment correlation coefficients were calculated separately for the Mexican-American and Anglo students, and are presented in Tables XXIX and XXX. The correlation between mathematics grades and Arithmetic Skills is much lower for the Mexican-American students than it is for the Anglos. This indicates that the teacher-assigned grades in mathematics

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[6] L. G. Humphreys, "The Organization of Human Abilities," American Psychologist, XVII (1962), pp. 475-483.

[7] Coleman, et al., op. cit., p. 293.

TABLE XXIX

ACHIEVEMENT MEASURES INTERCORRELATION MATRIX, MEXICAN-AMERICAN STUDENTS

N = 59

	ENGLISH GRADE	MATH GRADE	IOWA LANG. SKILLS	IOWA ARITH. SKILLS	NON-LANG. INTEL.
ENGLISH GRADE	1.000	0.226	0.420	0.387	0.407
MATHEMATICS GRADE		1.000	0.409	0.333	0.334
IOWA LANGUAGE SKILLS			1.000	0.672	0.608
IOWA ARITHMETIC SKILLS				1.000	0.608
NON-LANGUAGE INTELLIGENCE					1.000

TABLE XXX

ACHIEVEMENT MEASURES INTERCORRELATION MATRIX ANGLO STUDENTS

N = 30

	ENGLISH GRADE	MATH GRADE	IOWA LANG. SKILLS	IOWA ARITH. SKILLS	NON-LANG. INTEL.
ENGLISH GRADE	1.000	0.451	0.421	0.529	0.368
MATHEMATICS GRADE		1.000	0.602	0.626	0.428
IOWA LANGUAGE SKILLS			1.000	0.625	0.650
IOWA ARITHMETIC SKILLS				1.000	0.584
NON-LANGUAGE INTELLIGENCE					1.000

for the Mexican-American students did not reflect their mathematical skills as assessed by the Arithmetic Skills test of the Iowa Test of Basic Skills.

Achievement Differences Among Students.

To determine if there were significant differences among the students on the various achievement measures, a series of analyses of variance were performed using the same categories and methods described in the previous section. The results of these analyses are presented in Appendix C and are summarized in Table XXXI.

One significant difference was detected between males and females: girls, regardless of their background, received higher English grades.

Mexican-American students from families using less English were about one grade level behind the Anglo students on Language Skills. Both groups of Mexican-American students were significantly below Anglo students on Arithmetic Skills and Non-Language Intelligence. Mexican-American students from families using more English were approximately one grade level behind Anglos on Arithmetic Skills and scored an average of ten IQ points lower than Anglo students. The Mexican-American students from families using less English were approximately one and one-half grade levels behind Anglos on Arithmetic Skills and scored an average of twenty IQ points below the Anglo students.

TABLE XXXI

DIFFERENCES AMONG STUDENTS ON ACHIEVEMENT MEASURES

ACHIEVEMENT MEASURE	SIGNIFICANT DIFFERENCES WERE FOUND BETWEEN:			
	MALES AND FEMALES	ANGLO AND ENGLISH LANGUAGE MEXICAN-AMERICAN STUDENTS	ANGLO AND SPANISH LANGUAGE MEXICAN-AMERICAN STUDENTS	ENGLISH AND SPANISH LANGUAGE MEXICAN-AMERICAN STUDENTS
ENGLISH GRADE	$p < 0.05$	N.S.	N.S.	N.S.
MATHEMATICS GRADE	N.S.	N.S.	N.S.	N.S.
IOWA LANGUAGE SKILLS	N.S.	N.S.	$p < 0.05$	N.S.
IOWA ARITHMETIC SKILLS	N.S.	$p < 0.05$	$p < 0.01$	N.S.
NON-LANGUAGE INTELLIGENCE	N.S.	$p < 0.05$	$p < 0.01$	$p < 0.05$

One significant difference between the two groups of Mexican-American students was detected. Mexican-American students from families using less English scored an average of ten IQ points below students from families using more English.

In no instance was a significant interaction between ethnic background and sex detected.

Correlation of Sociocultural Characteristics and Achievement.

The correlations between the scales and the measures of achievement were calculated separately for the Anglo and Mexican-American students, to check for the possibility that the relationships were not the same for the two groups. The correlations of the scales with the achievement measures are shown in Table XXXII for the Mexican-American students and Table XXXIII for the Anglo students. The total number of students included in some of these calculations is less than the one hundred twenty-six who had complete questionnaire responses, as some of these students had not taken the intelligence test or the standardized achievement test.

For both groups of students Self-Concept of Ability and the independence training scales were clearly related to most of the measures of achievement. It is interesting to note that for both groups of students these scales

TABLE XXXII

CORRELATIONS OF SCALES WITH ACHIEVEMENT MEASURES FOR MEXICAN-AMERICAN STUDENTS

SCALE	ENGLISH GRADE	MATH. GRADE	IOWA LANG. SKILLS	IOWA ARITH. SKILLS	NON-LANG. I.Q.
SES INDICES					
1A: Father's Education	-.02	.26•	.14	.20	.19
1B: Father's Occupation	.00	.18	.04	.07	-.08
1C: Mother's Education	.17	.16	.22	.16	.21
SOCIOCULTURAL CHARACTERISTICS					
2: Language	-.04#	.08	.10	.23•	.24•
3: Self-Concept of Ability	.31•	.33•	.35•	.44•	.13
4A: Fatalism versus Activism	.16	.20	.22	.24•	.19
4B: Occupational Primacy	-.04	.16#	-.11	.16#	-.02
4C: Planning Ahead versus Passive Acceptance	-.18	-.10	-.14	-.12	.02#
4D: Striving Orientation	.06#	.08#	.06#	.14#	.05#
5A: Father's Independence Training	.27•	.27•	.32•	.26•	.24•
5B: Mother's Independence Training	.24•	.23•	.30•	.24•	.24•
5C: Total Independence Training	.28•	.28•	.33•	.28•	.26•
6A: Parental Pressure to get Good Grades	.07	.10	-.06#	.00	-.04#
6B: Amount of Parental Help with Schoolwork	.07	-.04#	-.10#	.01	.20
6C: Parents' Desire that the Student go to College	-.10	.00	-.12	-.16	-.08
6D: Parental Pressure to Complete High School	-.11	-.11	-.19	-.05	-.33•
7A: Religious Social Distance	.06#	-.24•	.01#	-.24•	-.23•
7B: Nationality Social Distance	.08#	.00	.03#	.01	-.19
7C: Language Social Distance	.02	.16	-.04	-.04	-.01
NUMBER OF STUDENTS	87	87	70	70	74

•Correlation is significant at the 0.05 level

#Denotes a correlation opposite to the predicted direction.

TABLE XXXIII

CORRELATIONS OF SCALES WITH ACHIEVEMENT MEASURES FOR ANGLO STUDENTS

SCALE	ENGLISH GRADE	MATH. GRADE	IOWA LANG. SKILLS	IOWA ARITH. SKILLS	NON-LANG. I.Q.
SES INDICES					
1A: Father's Education	.05	.05	.11	.35*	-.11
1B: Father's Occupation	.15	.11	.17	.37*	.01
1C: Mother's Education	-.09	-.07	.30	.13	.00
SOCIOCULTURAL CHARACTERISTICS					
3: Self-Concept of Ability	.32*	.45*	.55*	.51*	.48*
4A: Fatalism versus Activism	.11	.01	.22	.24	.26
4B: Occupational Primacy	.16#	-.19	-.01	.04#	.12
4C: Planning Ahead versus Passive Acceptance	.21#	-.16	-.10	-.21	-.07
4D: Striving Orientation	.02#	-.09	-.09	-.11	-.05
5A: Father's Independence Training	.33*	.11	.23	.39*	.28
5B: Mother's Independence Training	.22	-.06#	.06	.20	.25
5C: Total Independence Training	.32*	.04	.18	.35*	.30
6A: Parental Pressure to get Good Grades	-.21#	-.25#	-.13#	-.29#	-.12#
6B: Amount of Parental Help with Schoolwork	.04	-.11#	.12	.30	.08
6C: Parents' Desire that the Student go to College	-.42*	-.19	-.16	-.34*	-.17
6D: Parental Pressure to Complete High School	-.32*	-.30*	-.10	-.35*	-.16
7A: Religious Social Distance	-.39*	-.03	-.39*	-.25	-.44*
7B: Nationality Social Distance	-.26	.10	-.21	-.15	-.47*
7C: Language Social Distance	-.18	-.17	-.22	-.22	-.38*
NUMBER OF STUDENTS	39	39	33	33	36

[*] Correlation is significant at the 0.05 level.

[#] Denotes a correlation opposite to the predicted direction.

generally correlated more strongly with achievement than did the socioeconomic status indices.

For both groups of students, the following scales correlated significantly with one or more of the achievement measures: Father's Education, Self-Concept of Ability, Father's Independence Training, Mother's Independence training, Total Independence Training, and Religious Social Distance. All of these correlations were in the direction predicted from the model.

In addition to the above, the following scales only correlated significantly with one or more of the achievement measures for the Mexican-American students: Language, Fatalism versus Activism, and Parental Pressure to Complete High School. The scales that only correlated significantly with achievement measures for the Anglo students were: Father's Occupation, Parents' Desire that the Student go to College, Nationality Social Distance, and Language Social Distance.

Stepwise Linear Regression Analysis.

Regression analysis determines the best equation (in a least squares sense) relating the dependent measure (Y) and the predictor variables (X_j's) using the following general equation:

$$Y = B_0 + B_1X_1 + B_2X_2 + \;\; .... \;\; B_jX_j + \text{error}$$

The computational procedure for stepwise linear regression enters the predictor variables (X_j's) into the equation one at a time in the order of their contribution to the prediction equation. After each variable has been entered the contribution of all the predictor variables previously entered is examined, and any variable not contributing significantly to the prediction equation at that stage is dropped.

The computations for a stepwise linear regression analysis are terminated when it is determined that all of the variables retained in the regression equation contribute significantly, and that all of the remaining variables do not contribute significantly. This insures that the final prediction equation contains only those variables that contribute significantly to the regression equation.[8]

Since the computational method for stepwise regression analysis enters predictors into the equation until no remaining variables are found that contribute significantly, and also examines all of the predictors previously entered to make certain that their contribution to the regression equation is significant, the choice of the level of significance required for a variable to be entered and retained in the equation is important. Generally, when a more liberal significance level is chosen (i.e., 0.20 is more liberal than 0.05) more variables are entered and are retained in the final regression equation, and there is more power to detect relationships and to account for more of the variation. However, a more liberal significance level for entering and retaining variables may result in a loss of parsimony by having many variables in the equation and by more error in the estimates of the individual regression coefficients. For this study a liberal significance level of 0.20 was chosen. This meant that all the variables entered and retained in the final regression equation contributed significantly at or beyond the 0.20 level of significance.

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[8] N. R. Draper and H. Smith, Applied Regression Analysis (New York: John Wiley and Sons., 1966), Chap. VI. The computations were performed using programs of the 1130 Statistical System (1130-CA-06X) described in the 1130 Statistical System User's Manual (White Plains, New York: International Business Machines Corp., 1967).

Regression analyses were performed to determine how much variation in the achievement measures could be attributed to variations on the scales. Each achievement measure was considered in turn as the dependent variable and the stepwise regression analyses were performed separately for the Anglo and the Mexican-American students.

For the Anglo students sex, Self-Concept of Ability, the Achievement Orientation scales, Total Independence Training, the Family Achievement Press scales, and the Social Distance scales were used as predictor variables in all analyses. All of the above mentioned variables were used for the Mexican-American students, with the addition of the Language scale as a predictor.[9]

The results of all these regression analyses are presented in Appendix D, and are summarized in Table XXXIV and XXXV.

English grades. An examination of Tables XXXIV and XXXV reveals that there was quite a difference in the variables that entered the regression equations for the two groups of students, the beta coefficients (which indicate the relative importance of the variable in the regression equation), and the amount of variance in the grades accounted for by each regression equation.

Sex, Self-Concept of Ability, and Planning Ahead versus Passive acceptance are common to the regression equations for both groups of students. However, the beta coefficients for Planning Ahead versus Passive Acceptance are reversed in the two equations, being -0.16 for the Mexican-American students and 0.21 for the Anglo students. Referring to Appendix E, Tables E - I and E - II, it can be seen that these beta coefficients reflect the relative magnitude and direction of the correlations between this scale and the students' English grades, which were -0.18

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[9] These variables were used as predictors because they were included in the achievement motivation model described earlier. The socioeconomic indices were not included in this model. The students' gender was included as a predictor after its importance was demonstrated in preliminary analyses.

TABLE XXXIV

BETA COEFFICIENTS FOR STEPWISE REGRESSION ANALYSES CALCULATED TO PREDICT ACHIEVEMENT MEASURES FOR MEXICAN-AMERICAN STUDENTS

SCALE	DEPENDENT VARIABLE				
	ENGLISH GRADE	MATH. GRADE	IOWA LANG. SKILLS	IOWA ARITH. SKILLS	NON-LANG. INTEL.
2: Language					
3: Self-Concept of Ability	0.334	0.330	0.380	0.457	
4A: Fatalism versus Activism					0.149
4B: Occupational Primacy		0.244		0.147	
4C: Planning Ahead versus Passive Acceptance	-0.164				
4D: Striving Orientation					
5C: Total Independence Training	0.243	0.232	0.370	0.234	0.151
6A: Parental Pressure to get Good Grades			-0.148		
6B: Amount of Parental Help with Schoolwork			-0.177		
6C: Parents' Desire that the Student go to College					
6D: Parental Pressure to Complete High School		-0.151	-0.145		
7A: Religious Social Distance		-0.134		-0.165	-0.188
7B: Nationality Social Distance					-0.190
7C: Language Social Distance	0.144				0.255#
SEX	0.200				
PER CENT OF VARIANCE ACCOUNTED FOR	25	26	31	33	29

#Scale entered as a suppressor variable

TABLE XXXV

BETA COEFFICIENTS FOR STEPWISE REGRESSION ANALYSES CALCULATED TO PREDICT ACHIEVEMENT MEASURES FOR ANGLO STUDENTS

	DEPENDENT VARIABLE				
SCALE	ENGLISH GRADE	MATH. GRADE	IOWA LANG. SKILLS	IOWA ARITH. SKILLS	NON-LANG. INTEL.
3: Self-Concept of Ability	0.271	0.437	0.548	0.394	0.404
4A: Fatalism versus Activism					0.196
4B: Occupational Primacy	0.250				
4C: Planning Ahead versus Passive Acceptance	0.212			-0.400	0.237#
4D: Striving Orientation				0.542#	
5C: Total Independence Training		-0.231#			
6A: Parental Pressure to get Good Grades		-0.282		-0.646	
6B: Amount of Parental Help with Schoolwork				0.338	
6C: Parents' Desire that the Student go to College	-0.426			-0.290	
6D: Parental Pressure to Complete High School	-0.234	-0.350			
7A: Religious Social Distance	-0.196				
7B: Nationality Social Distance					-0.407
7C: Language Social Distance					
SEX	0.322				-0.273
PER CENT OF VARIANCE ACCOUNTED FOR	57	38	30	61	47

#Scale entered as a suppressor variable

and 0.20 for the Mexican-American and Anglo students, respectively. In addition to the above scales, Total Independence Training and Language Social Distance entered the regression equation for the Mexican-American students, while Occupational Primacy, Parents' Desire that the Student go to College, Parental Pressure to Complete High School, and Religious Social Distance entered the regression equation for the Anglo students. The regression equation for the Anglo students accounted for fifty-seven percent of the variation in the grades, whereas the equation for the Mexican-American students accounted for twenty-five per cent of the variation.

Mathematics grades. The second columns of Tables XXXIV and XXXV summarize the results of the stepwise regression analyses calculated to predict mathematics grades for the two groups of students. As was the case for English grades, the two equations were not the same. Two scales were common to both equations, Self-Concept of Ability and Total Independence Training. However, the beta coefficients were reversed for Total Independence Training, being 0.23 for the Mexican-American students and -0.23 for the Anglo students' equation. The Total Independence Training scale is probably functioning as a suppressor variable in the Anglo students' equation, since its correlation (see Table E - II) is nearly zero with the mathematics grades (0.04), and it is moderately correlated with two other scales in the regression equation, namely, 0.31 with Self-Concept of Ability and -0.30 with Parental Pressure to Complete High School. A clear explanation of the function of a supressor variable is provided by the following definition from English and English. A suppressor variable is:

> ... a variable in a prediction battery that correlates zero with the criterion but highly with another predictor in the battery. It has the effect of subtracting from the predictor variable that part of its variance that does not correlate with the criterion, and hence increases the predictive value of the battery.[10]

Thus, one should not say less democratic child-rearing practices were associated with higher mathematics grades for the Anglo students. Instead, one should view this scale as increasing the accuracy of the regression equation by compensating for some of the variance of the Self-Concept scale and the Parental Pressure to Complete High School scale that is not related to their mathematics grades.

Besides the three scales common to both regression equations (Self-Concept of Ability, Parental Pressure to Complete High School, and Total Independence Training), the Mexican-American students' equation included Occupational Primacy and Religious Social Distance, while the equation for the Anglo's included Parental Pressure to get Good Grades.

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[10] H. B. English and A. English, A Comprehensive Dictionary of Psychological and Psychoanalytic Terms (New York: David McKay Co., 1964), p. 537.

The regression equation for the Anglo students accounted for thirty-eight per cent of the variation in the mathematics grades, while the regression equation for the Mexican-American students accounted for twenty-six per cent of the variation. As was the case for the English grades, the regression equation for the Mexican-American students did not account for as much of the observed variation in their mathematics grades, suggesting that other factors not included in the present study, such as teacher variables, school variables and peer relation variables may be more involved in determining the Mexican-American students' grades.

Iowa language skills score. The third columns of Tables XXXIV and XXXV present the final stepwise regression equations for the two groups of students. The only scale that entered the regression equation for the Anglo students was Self-Concept of Ability, which accounted for thirty per cent of the variance. No other variable contributed significantly to this equation, even with the very modest significance level of 0.20 being all that was required for a variable to enter the regression equation.

The regression equation for the Mexican-American students included five scales and it accounted for thirty-one per cent of the variance. These scales were Self-Concept of Ability, Parental Pressure to get Good Grades, Amount of Parental Help with Schoolwork, and Parental Pressure to Complete High School.

Iowa arithmetic skills score. The beta coefficients for the two stepwise regression analyses to predict Arithmetic Skills are shown in column four of Tables XXXIV and XXXV. The only scale common to both regression equations is Self-Concept of Ability. The regression equation for the Mexican-American students also included Occupational Primacy, Total Independence Training and Religious Social Distance. The beta coefficients were all in the same direction as the observed correlations of these scales with the Total Arithmetic scores, and the regression equation accounted for thirty-three per cent of the variation.

The regression equation for the Anglo students accounted for sixty-one per cent of the variation, and included six scales: Self-Concept, Planning Ahead versus Passive Acceptance, Striving Orientation, Parental Pressure to get Good Grades, Amount of Parental help with Schoolwork, and Parents' Desire that the Student go to College. The Striving Orientation scale entered the regression equation with a beta coefficient opposite to its correlation with the criterion (see Table E - IV), it may be functioning as a suppressor variable in this equation, due to its relatively high correlation with Self-Concept (-0.35), Planning Ahead versus Passive Acceptance (0.39), and Parental Pressure to get Good Grades (0.52), as compared to its low correlation with Total Arithmetic (-0.11).

Non-language intelligence. The last column of Tables XXXIV and XXXV display beta coefficients for the final regression equations to predict Non-Language Intelligence test scores for Mexican-American and Anglo students. Both of the equations included the Fatalism versus Activism and Nationality Social Distance scales. The regression equation for the Mexican-American students also included Total Independence Training, Amount of Parental Help with Schoolwork, Parental Pressure to Complete High School, Religious Social Distance, and Language Social Distance. The Language Social Distance scale entered the regression equation as a suppressor variable, since its correlation (see Table E - V) with Intelligence is quite low (-0.01), and its correlation with Nationality Social Distance is moderate (0.47). This regression equation accounted for twenty-nine per cent of the variation of the Mexican-American students' Intelligence scores.

Besides Fatalism versus Activism and Nationality Social Distance, the regression equation for the Anglo students included Self-Concept of Ability, Planning Ahead versus Passive Acceptance, and Sex. The beta coefficient for the sex variable indicated that males tended to have lower Intelligence scores than females in this sample. The Planning Ahead versus Passive Acceptance scale appeared to be functioning as a suppressor variable, since its correlation (see Table E - VI) with Intelligence was quite low (-0.07), while its correlation with Sex and Self-Concept of Ability was moderate (0.31 and -0.46, respectively).

Summary.

In general, the entrance of the scales into the regression equations depended both on the students' ethnicity and the achievement measure. It is interesting to note that Language was conspicuously absent for all the regression equations for the Mexican-American students, while Self-Concept of Ability and Total Independence Training were present in all but one instance. Parental Pressure to Complete High School and Religious Social Distance were also moderately good predictors for the Mexican-American students, as they occurred in over half of the equations. None of these regression equations came close to accounting for half the variation of the achievement measures. The amount of variance accounted for ranged from twenty-five to thirty-three per cent, with a median of twenty-nine per cent.

For the Anglo students, Self-Concept of Ability was the best single predictor of their achievement, and no other scale entered in more than two of the five regression equations. This irregular pattern of entrance in the equations notwithstanding, the regression equations themselves account for far more of the variation of the achievement measures. The amount of variance accounted for ranged from thirty to sixty-one per cent, with a median of forty-seven per cent of the variance accounted for.

IV. SUMMARY OF RESULTS

All three of the socioeconomic indices showed that the Mexican-American students in this sample came from families of much lower socioeconomic status than did the Anglo students.

Significant differences were found between the Mexican-American and Anglo students in this sample on eight of the measures of sociocultural characteristics besides the obvious differences on the three socioeconomic indices. The Mexican-American students were found to have significantly lower self-concepts of ability, to have attitudes that were more fatalistic and more passive, to experience less democratic child-rearing practices, to have a higher striving orientation, and to have higher religious social distance scores.

The males and females, regardless of ethnicity, differed significantly on three measures. The girls reported more democratic child-rearing practices on the Mother's Independence Training and the Total Independence Training scales. The girls also reported less pressure from their parents to attend college than did the boys.

The following characteristics were significantly related to an English-speaking background for the Mexican-American students: (1) higher socioeconomic status, (2) more parental assistance with schoolwork, and (3) high parental pressure to complete high school. These last two relationships were independent of the socioeconomic status of the students' families.

The following characteristics were significantly related to higher socioeconomic status on the part of the Mexican-American students: (1) an English-speaking background, (2) high parental pressure to get good grades, (3) democratic independence training, (4) more parental assistance with school work, and (5) low religious social distance. The amount of parental assistance with schoolwork was partially related to language usage in the home.

For both groups of students, high achievement was associated with high self-concept of ability and low social distance. In addition, high achievement for the Mexican-American students was associated with democratic independence training, an activistic, future-time orientation, and an English-speaking background.

In addition to high self-concept of ability and low social distance, high achievement for the Anglo students was associated with high parental pressure to complete high school and high pressure to go to college.

The regression analyses indicated that for both groups of students, self-concept of ability was the best single predictor of achievement. For the Mexican-American students, self-concept of ability, independence training, parental pressure to complete high school and religious social distance were the most consistent predictors of achievement. For Anglo students, self-concept of ability was the only consistent predictor. The regression equations for the Anglo students accounted for one and one-half times as much of the variance as they did for the Mexican-American students.

CHAPTER V

SUMMARY, GENERAL CONCLUSIONS AND RECOMMENDATIONS

This final chapter contains a summary of the study and a discussion of its findings, the general conclusions drawn from these findings, and the recommendations. A statement of the purpose and method of the study is contained in the summary. The general conclusions derive from the findings presented in Chapter IV. Areas for further research are discussed in the recommendations.

I. SUMMARY AND DISCUSSION OF RESULTS

Previous studies have consistently described Mexican-Americans as present-time oriented, fatalistic, resistant to change, autocratic with children and unconcerned about efficiency or performance.

The objectives of this study were: (1) to compare Mexican-American and Anglo junior high school students on selected sociocultural characteristics; (2) to determine how these sociocultural characteristics were related to the language spoken in the home; and (3) to ascertain the degree to which differences in achievement between Mexican-American and Anglo students could be accounted for in terms of these sociocultural characteristics.

The sample consisted of 126 junior high school students, eighty-seven of whom were Mexican-American and thirty-nine of whom were Anglo. This sample included only students from families with three or more children in school.

The following achievement data were collected: English and mathematics grades, Language Skills and Arithmetic Skills scores on the Iowa Test of Basic Skills, and Non-Language Intelligence Test scores on the California Short-Form Test of Mental Maturity. A student questionnaire was used to measure self-concept of ability; achievement orientation, the type of independence training and achievement press experienced in the home; and social distance attitudes. In addition, three socioeconomic indices were derived from interview data obtained from parents. These questions were scaled by appropriate techniques to develop unidimensional scales.

The specific hypotheses tested were derived from a general culturally based model of achievement motivation. This model viewed language usage in the home as a major influence on certain sociocultural characteristics. In turn, both language usage and sociocultural characteristics were related to the students' achievement.

Two sets of hypotheses were derived from this model. One set dealt with the relation of the sociocultural characteristics to the students' ethnicity and language background, while the second set concerned the relation of these characteristics to the students' achievement. The first set of hypotheses were tested by a series of two-way analyses of variance and by a correlation analysis. The hypotheses and findings are outlined below.

Sociocultural Differences Among Mexican-American and Anglo Students

The first and second major hypotheses tested stated that Mexican-American and Anglo students differed significantly on each of the sociocultural characteristics, and that the characteristics of Mexican-American students from families speaking mostly English were more similar to those of Anglo students than are the characteristics of Mexican-American students from Spanish-speaking families. The following differences were found between Mexican-American and Anglo students:

The Mexican-American students in this sample came from families of much lower socioeconomic status than did the Anglo students. This finding indicated that the present sample reflected the same discrepancy in educational and occupational attainment of Mexican-Americans and Anglos that previous studies have reported.

Mexican-American students, when compared to their Anglo peers, were found to have significantly lower self-concepts of ability. Furthermore, Mexican-American students from families using more English reported just as low a self-concept of ability as did Mexican-American students from families using less English. This indicated that the Mexican-American student's depressed self-concept was an outcome of his ethnicity, and not related to the amount of English or Spanish spoken at home.[1] The importance of this finding will be discussed, at some length, when the relation of these characteristics to achievement is discussed.

Mexican-American students, regardless of language usage, were found to have fatalistic, present-time orientations, and a passive, accepting attitude toward life, when compared to their Anglo peers. This indicated that the Mexican-American students' low scores on these measures of achievement orientation were an outcome of their ethnicity and were unrelated to the amount of English or Spanish used at home.[2]

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[1] This finding bears out the conjecture by Manuel, op. cit., p. 189, that Mexican-American students had internalized a negative self-image. Neither of the two studies reporting no differences in the self-concept of Mexican-American and Anglo students included self-concept of ability as part of their definition of self-concept, so the present study's results can not be said to directly contradict their findings. (See Carter, op. cit., and Najmi, op. cit.) Rather, these results indicate that self-concept has many aspects, and that Mexican-American students differed from Anglo students in this particular aspect.

[2] These findings are similar to the differences between Anglo and Mexican-American adults reported by Kluckhohn and Strodtbeck, op. cit., and Saunders, op. cit. In addition, Schwartz, op. cit., found Mexican-American students to have a present-time orientation.

Mexican-American students had a higher striving orientation than did Anglo students. This finding differs from the earlier reports that had indicated that Mexican-Americans were not concerned with occupational success or "getting ahead."[3] Mexican-American students, regardless of the amount of English spoken in the home, had significantly higher striving orientations than did Anglo students.

Mexican-American students on the whole had higher religious social distance scores than did their Anglo peers. This difference between the attitudes of Mexican-Americans and Anglos toward persons of a different religion is similar to the findings of Loomis and his associates, for Mexican-American adults.[4]

A third hypothesis about sociocultural differences that was tested stated that males and females differed significantly on several sociocultural characteristics, particularly on achievement orientation. No significant differences between males and females were detected on the measures of achievement orientation. However, girls, regardless of their ethnicity, reported experiencing more democratic independence training than did boys, and they also reported less pressure to go to college from their parents. This first finding differs from Manuel's description of Mexican-American family life. He reported that Spanish-speaking parents maintained close supervision over the girls but permitted their boys more freedom.[5]

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[3] Saunders, op. cit.

[4] Loomis, Loomis and Gullahorn, op. cit., pp. 36-37.

A fourth hypothesis tested was that the relation between the sociocultural characteristics of Mexican-American students and their language background was independent of their socioeconomic status. The correlational analysis indicated that the use of English by the family was positively associated with parental assistance with schoolwork and parental pressure to complete high school. Both of these relations were independent of the socioeconomic status of the families. This suggests that Mexican-American parents who speak more English place a higher value on a high school education for their children. These parents stress the importance of completing high school and more often assist their children with schoolwork. Interestingly enough, Mexican-American students from families using more English reported more parental pressure to finish high school than did the Anglo students, although this difference was not significant at the 0.05 level. These findings suggest that Mexican-American parents have far more desire that their children receive an education than the literature would lead one to believe.

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[5] Manuel, op. cit., p. 44.

These findings that only two scales were related to language usage provide scant support for the hypothesized link between language usage and the sociocultural characteristics of Mexican-American students. The students' ethnic background, rather than the amount of English or Spanish used in the home, appears to be the important factor in producing sociocultural differences among students. While many of the Mexican-American students reported some Spanish used at home, all but two of the eight significant differences between Mexican-American and Anglo students were found to be true regardless of how much English or Spanish was spoken at home.

The correlational analyses indicated that five of the sociocultural characteristics of Mexican-American students were significantly related to their socioeconomic status. For these students a high socioeconomic status was associated with an English-speaking background, high parental pressure to get good grades, democratic independence training, more parental assistance with schoolwork, and low religious social distance. These findings indicate that the Mexican-American family's socioeconomic status has more influence on the sociocultural characteristics of their children than does the family's language usage. In fact, three of these relations between sociocultural characteristics were independent of language usage. Hence the previously postulated model of sociocultural change should be revised to place socioeconomic status as one of the major determiners of Mexican-American students' sociocultural characteristics. The revision of this model is discussed in the recommendations section.

The general pattern that emerges from the sociocultural differences found between Mexican-American and Anglo students is that these differences are due to the Mexican-American students' ethnic background, and possibly due to the low socioeconomic status and marginal social position associated with their ethnic background. The data also indicate that the Mexican-American students exhibit characteristics of the culture of poverty which was described in Chapter II.

According to Lewis, who identified and described the culture of poverty, this culture tends to perpetuate itself once it has come into existence. If Mexican-Americans are part of this culture, the findings of the present study that neither the use of more English nor a higher socioeconomic status were related to the student's self-concept of ability, fatalistic versus activistic outlook, and their views on the value of planning ahead may bear out one of Lewis' conjectures. He surmised that "the elimination of physical poverty *per se* may not be enough to eliminate the culture of poverty which is a whole way of life."[6]

Sociocultural Characteristics and Achievement

A second set of hypotheses was generated from the achievement motivation model mentioned above. It was hypothesized that high achievement on the part of both Mexican-American and Anglo students would be associated with high self-concept of ability, high achievement orientation, democratic independence training, and high parental achievement press. It was also hypothesized for Mexican-American students that in addition to the above, high achievement would be associated with an English-speaking background and low social distance. Two methods were used to test these hypotheses. The correlations of the characteristics with the achievement measures were examined separately for each group of students, and the characteristics were used as predictors in step-wise linear regression analyses calculated separately for each group of students to predict their achievement.

An examination of the correlations between the sociocultural characteristics and the achievement measures indicated that a few scales were generally related to achievement, regardless of the students ethnicity, but that in most instances the relation between a particular characteristic and achievement depended both on the student's ethnicity and on the achievement measure employed.

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[6] Oscar Lewis, La Vida: A Puerto Rican Family in the Culture of Poverty (New York: Random House, 1966), p.lii.

For example, high achievement on the part of students from both groups was associated with high self-concept of ability and low religious social distance. The pervasive effect of self-concept on achievement is similar to that noted in the Equality of Educational Opportunity study.[7] The relation of low social distance to high achievement on the part of Anglo students is not often noted in the literature. Lavin noted that aggressiveness and hostility were negatively related to achievement.[8] Possibly personality variables which are associated with low social distance are also associated with high achievement. Lavin noted that social maturity and low stereopathy were among the variables associated with high achievement. (Stereopathy indicates a difficulty with ambiguity, abstraction, spontaneity and departures from convention.)[9]

The relation of child-rearing practices to achievement demonstrates the effect of ethnicity on the relation of a characteristic to achievement. Democratic independence training was associated with high achievement on the part of Mexican-American students, but there was no significant relation between independence training practices and the achievement of Anglo students. This indicated that child-rearing practices, as well as self-concept of ability and religious social distance had a general influence on the achievement of Mexican-American students, regardless of the achievement measure employed. Since Mexican-American students were found to be significantly different from Anglo students on these same characteristics, it appears that part of the depressed achievement of Mexican-American students can be attributed to their low self-concept of ability, non-democratic family environment and high religious social distance.

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[7] Coleman, et al., op. cit., p. 319.

[8] Lavin, op. cit., p. 98.

[9] Ibid., pp. 103-106.

The relation of the other characteristics to achievement depended both on the student's ethnicity and the achievement measure employed. For example, an activistic, future-time orientation was significantly associated with Arithmetic Skills test scores for the Mexican-American student, and the correlation of this scale with achievement was just below significance for two other achievement measures, indicating a similar, though non-significant, trend for these students. This same scale was not significantly correlated with any of the achievement measures for the Anglo students.

High parental pressure to complete high school and high parental pressure to go to college were significantly associated with high English and mathematics grades for Anglo students, but no such relation was detected between these achievement press scales and achievement for Mexican-American students.

These findings suggest that achievement is not unidimensional. Each measure of achievement probably includes both a general achievement factor and certain elements unique to that measure. Furthermore, different aspects of a student's values and home background appear to have a distinct relation to the elements that are unique to each achievement measure. Finally, a student's ethnicity seems to play an important role in determining which aspect of a student's values and home background are related to a particular achievement measure.

The prediction equations for the English and mathematics grades indicated that high self-concept of ability was a consistent predictor of high grades for both groups of students. In addition, democratic independence training was a significant predictor of high grades for the Mexican-American students. However, democratic independence training did not significantly predict high grades for the Anglo students.

High parental pressure to complete high school predicted high mathematics grades for Mexican-American students, and predicted high English and high mathematics grades for Anglo students. This indicated that for both groups of students, the parents attitudes toward education and achievement are reflected in their grades.

The regression equations predicting the Mexican-American students' grades accounted for one-fourth of the variation in their grades; whereas the regression equations predicting the Anglo students' grades accounted for fifty-seven per cent of the variation in their English grades and thirty-eight per cent of the variation in their mathematics grades. These values are much greater than the amount of variation accounted for by Anderson and Johnson in their study. They accounted for twenty-three per cent of the variation in the students' English grades and fourteen per cent of the variation in their mathematics grades.[10] Two reasons for these differences are offered. First, the sociocultural characteristics examined in the Anderson and Johnson study differed somewhat from those examined in the present study. Second, Anderson and Johnson performed their regression analyses for all students regardless of ethnic background. This possibly reduced the accuracy of prediction in their study, since the present study has demonstrated that the relation of many characteristics to achievement depends on the student's ethnicity.

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[10] Anderson and Johnson, op. cit.

The characteristics that contributed significantly to the prediction of the students' achievement test scores also varied considerably, depending both on the students' ethnicity and on the achievement test score being predicted. High self-concept of ability was a consistent predictor of high scores for both groups of students. In fact, for the Anglo students this was the only variable that contributed significantly to the prediction of their Language Skills scores.

For the Mexican-American students, high self-concept of ability and democratic parental independence training practices predicted high scores on both the Language and the Arithmetic Skills tests. High parental achievement press, as reflected by high parental pressure to get good grades, and high parental pressure to complete high school, also predicted high Language Skills scores for the Mexican American students. This indicated that the parents' concern with the students' education was reflected in their language skills as measured by the Iowa Test of Basic Skills.

Similarly, parental press for achievement was reflected in the Anglo students' Arithmetic Skills test scores. The amount of parental pressure to go to college and parental help with schoolwork predicted Arithmetic Skills test scores for these students.

The regression equations indicated that for both groups of students, parents tended to place more pressure to get good grades on students with lower skills as measured by the Iowa Test of Basic Skills. A similar relation between parental achievement pressure and grades was noted by Elder, who reported that middle-class parents tended to exert more pressure to achieve on students with poor grades.[11]

The regression equations predicting the Mexican-American students' achievement test scores accounted for one-third of the variation in their scores. In comparison, thirty per cent of the variation of the Anglo students' Language Skills scores and sixty-one per cent of the variation in their Arithmetic Skills test scores could be accounted for by the regression equations. The amount of variance in the Anglo students' Language Skills accounted for is low because only self-concept of ability contributed significantly to the prediction equation.

The prediction equations for the students' Non-Language Intelligence test scores indicated again that the relation of the sociocultural characteristics to achievement depended greatly on the ethnicity of the students. For Mexican-American students, high intelligence test scores were predicted by an activistic, future-time orientation, democratic independence training, more parental help with schoolwork, high parental pressure to complete high school, and low religious and nationality social distance. High intelligence test scores for the Anglo students were predicted by high self-concept of ability, an activistic, future-time orientation, a passive, accepting attitude toward events, and low social distance. The regression equation for the Mexican-American students accounted for twenty-nine per cent of the variation in their intelligence test scores, whereas the equation for the Anglo students accounted for forty-seven per cent of the variation in their scores.

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[11] Elder, _op_. _cit_., pp. 89-90

The general pattern that emerges from the equations predicting the students' standardized achievement measures is that the sociocultural characteristics account for more of the variation in the Anglo students' scores than they do for the Mexican-American students' scores. This suggests that other variables not included in the study, such as teacher and peer relation variables, have more of an influence on the achievement of Mexican-American students than they do on the achievement of Anglo students.[12]

In comparison to previous studies, the regression equations account for more variation in achievement for both groups of students than previous studies. For example, the Equality of Educational Opportunity study reported that the students' attitudes and self-concept accounted for about fifteen per cent of the variation in the verbal achievement of Mexican-American students, and about thirty per cent of the variation in the verbal skills of White students.[13]

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[12] This finding is supported by the Equality of Educational Opportunity (Coleman, et al., op. cit., p. 297.) study, which reported that school factors have more effect on the achievement of students from minority groups than they do on the achievement of other students.

An examination of all of the regression equations reveals that for both groups of students, high self-concept of ability was the most consistent predictor of high achievement. In fact, for Anglo students, high self-concept of ability was the only characteristic that consistently predicted high achievement for three or more of the measures employed. The relation of the other characteristics to achievement depended both upon the students' ethnicity and the achievement measure employed. For Mexican-American students, the characteristics that consistently predicted high achievement for three or more of the measures were high self-concept of ability, democratic independence training, high parental pressure to complete high school, and low religious social distance.

The use of English at home did not predict high achievement on any of the measures for the Mexican-American students. This does not mean that facility in English is unrelated to achievement. Takesian found that the ability to speak and read English adequately was an important factor in determining whether or not a Mexican-American student graduated from high school.[14] Similarly, the present study found that Mexican-American students from families using little English scored significantly lower than Anglo students on Language Skills, Arithmetic Skills and Non-Language Intelligence tests. What the results of these regression analyses mean is that the amount of English used at home by the family is not as good a predictor of achievement as the other characteristics examined in this study.

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[13] Coleman, *et al.*, *op. cit.*, p. 321.

II. CONCLUSIONS

The following conclusions are based on the findings which were summarized in the preceeding section.

Sociocultural Differences Among Students

The results of this study support the conclusion that there are distinct sociocultural differences between Mexican-American and Anglo junior high school students. Some of the differences detected are similar to the ones between adults identified by previous researchers. The findings that Mexican-American students have lower self-concepts of ability and a high striving orientation are new.

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[14] Takesian, op. cit.

The data support the conclusion that the differences found between Mexican-American and Anglo students were due to the students' ethnic backgrounds, and the socioeconomic and other social conditions associated with their ethnic backgrounds. The Mexican-American students in this study exhibited many of the characteristics associated with the culture of poverty described by Lewis. The data suggest that some of the characteristics of Mexican-American students may be due to their families' low socioeconomic status. Therefore the data support the tentative conclusion that Mexican-American students are part of the more widespread culture of poverty. As indicated in the following section, further research will be needed before this conclusion can be confidently asserted.

Sociocultural Characteristics and Achievement

In the light of the sociocultural differences between Mexican-American and Anglo students, and the relation of these characteristics to achievement, the following conclusions are drawn. Part of the depressed achievement of Mexican-American students can be attributed to some of their sociocultural differences from Anglo students, namely, their lower self-concepts of ability;

fatalistic, present-time orientation; high religious social distance; and non-democratic independence training.

However, since these sociocultural characteristics accounted for less of the variation of the Mexican-American students' achievement than they did for Anglo students, other important factors, not examined in this study, such as teacher and peer relation variables, have considerable influence on their achievement. The data do not support the contention that sociocultural differences account for the majority of the differences in achievement between the two groups of students. However, this study does indicate that about one third of the variation in the achievement of Mexican-American students is attributable to variations in the characteristics examined in this study.

IV. RECOMMENDATIONS FOR FURTHER RESEARCH

The following recommendations are made to identify areas in which the findings of this study might be supplemented and clarified by further research.

The present study was limited to data from 126 junior high school students enrolled in the Las Cruces public schools. Due to the small sample size and the fact that all the students were from the same urban setting, the generalizability of the findings and conclusions need to be examined by replicating this type of study using students from several urban and rural areas. The writer's own observations indicate that Mexican-American students from small communities in southern New Mexico have quite different characteristics than do students from urban centers, such as El Paso and Las Cruces.

These future studies should include an adequate number of Mexican-American students from middle-class families. This would permit a more detailed examination of the relation of socioeconomic status to the sociocultural characteristics than the present sample permitted.

The differences between the sociocultural characteristics of Mexican-American dropouts and graduates need to be explored further. Previous studies have reported that Mexican-American and Anglo students at the senior high school level are similar in their values. This present study has demonstrated that at the junior high school level these same two groups of students differ markedly on several characteristics related to achievement. This suggests that the Mexican-American students whose values deviate markedly from the Anglo students' values drop out, leaving a "purified" population of Mexican-American students in high school.

Since socioeconomic status was related to several of the sociocultural characteristics examined in this study, and since the Mexican-American students exhibited several of the characteristics ascribed to the culture of poverty, the possibility that the Mexican-Americans are part of the culture of poverty should be examined. This suggests that the techniques of cultural anthropology could be fruitfully employed to further elucidate the dynamics of this culture.

The model of sociocultural change, which viewed the family's language usage as the determiner of the student's sociocultural characteristics, was not supported by the findings of this study. Hence, a more adequate model of sociocultural change needs to be developed. It is suggested that this revised model of sociocultural change include socioeconomic status and the extent of the family's interaction with Anglos as possible determiners of the sociocultural characteristics of Mexican-American students. This model of sociocultural change should also allow for the possibility that Mexican-Americans are part of the culture of poverty, and that this culture includes dynamics and characteristics not observed in the dominant society. This suggests that the development of such a model would require both sociological and anthropological techniques.

An investigation of the sociocultural differences between Anglo students and students from other minority groups, and a determination of how their characteristics are related to achievement would also be a fruitful extension of the present study. The writer's own experience suggests that students from some of the southwestern Indian tribes, such as Navajo students, also differ markedly from Anglo students on variables related to achievement. Such cross-cultural investigations would provide a sound foundation from which one could make generalizations about sociocultural differences and achievement.

The findings of the present study suggest that achievement is multidimensional, and that different aspects of achievement are differentially affected by the student's values and background. Furthermore, the findings of this study suggested that ethnic background, or cultural variables associated with ethnicity, plays a role in determining which aspects of a student's attitudes and values affect his achievement. This whole area needs to be explicated by research directed at determining the dimensionality of achievement, and by research to determine the relationship of achievement motivation variables to these various dimensions of achievement.

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APPENDIX A

QUESTIONNAIRES

FAMILY INTERVIEW GUIDE

NUMBER____________

MARK THE SPACE ON THE ANSWER SHEET CORRESPONDING TO THE ANSWER THAT COMES CLOSEST TO THE RESPONSE SOLICITED FROM THE INTERVIEW

SECTION 1

24. How far did you go through school? (mother)

(A) Never went to school
(B) Some grade school
(C) Finished grade school
(D) Some high school
(E) Graduated from high school
(F) Trade or technical school
(G) Some college
(H) Graduated from college

46. How far did you go through school? (father)

(A) Never went to school
(B) Some grade school
(C) Finished grade school
(D) Some high school
(E) Graduated from high school
(F) Trade or technical school
(G) Some college
(H) Graduated from college

52. What work do you do? (father) You may not find your exact job listed, but check the description that comes closest. If you are out of work or retired, mark the one you usually did. Mark only your main job if you have more than one.

(A) Unskilled Laborer (such as cannery worker, janitor, general hospital employee, farm laborer, window cleaner, hod carrier, general construction laborers)
(B) Skilled Manual Employee (such as auto body repairman, die-maker, fireman, radio-TV repairman, printer, carpenter, plumber, welder, butcher and barber)

(C) Clerical and Sales (such as bank teller, railroad conductor, shipping or warehouse clerk, draftsman, supervisor of maintenance, time keeper)

(D) Administrative, Small Business and Semi-professional (such as credit manager, service manager, gas station owner, plumbing contractor, mortician, railroad dispatcher, deputy sheriff)

(E) Professional or Managerial (such as army major, lumberyard owner, lawyer, physician, teacher or pharmacist)

STUDENT QUESTIONNAIRE

NUMBER____________

MARK THE SPACE ON THE ANSWER SHEET CORRESPONDING TO THE ANSWER THAT IS CORRECT FOR YOU FOR EACH QUESTION. MARK ONLY ONE ANSWER FOR EACH QUESTION.

SECTION 1

1. I am a BOY (A) GIRL (B)

2. How old in years were you (as of your last birthday)?

   (A) 11
   (B) 12
   (C) 13
   (D) 14
   (E) 15
   (F) 16
   (G) 17
   (H) 18
   (I) 19
   (J) 20

3. Where were you born?

   (A) In the United States
   (B) In Mexico
   (C) Outside of the United States and Mexico
   (D) I don't know

4. Where was your FATHER born?

   (A) In the United States
   (B) In Mexico
   (C) Outside of the United States and Mexico
   (D) I don't know

ONLY ANSWER THE FOLLOWING QUESTIONS IF YOU ARE NOW LIVING WITH YOUR FATHER OR STEPFATHER.

18. How much help does he give you with your school work?

   (A) Almost everytime I ask
   (B) Most of the time
   (C) About half the time
   (D) Once in awhile
   (E) Never

19. How much does he want you to finish high school?

(A) Insists that I go
(B) Wants me to finish, but lets me decide
(C) Doesn't care
(D) Rather that I didn't but will let me finish if I want to
(E) Won't let me finish high school

20. How much does he want you to get good grades?

(A) He puts a lot of pressure on me
(B) He gets after me frequently
(C) He urges me to do well once in awhile
(D) Lets me do as I please
(E) Doesn't care

21. How much does he want you to attend college?

(A) Insists that I go
(B) Wants me to go, but lets me decide
(C) Doesn't care
(D) Rather that I didn't, but will let me go if I want to
(E) Won't let me go

ONLY ANSWER THE FOLLOWING QUESTIONS IF YOU ARE NOW LIVING WITH YOUR MOTHER OR STEPMOTHER

23. How often does she help you with your school work?

(A) Almost everytime I ask
(B) Most of the times I ask
(C) About half the time
(D) Once in awhile
(E) Never

25. How much does she want you to finish high school?

(A) Insists that I go
(B) Wants me to finish, but lets me decide
(C) Doesn't care
(D) Rather that I didn't, but will let me finish if I want to
(E) Won't let me finish high school

26. How much does she want you to get good grades?

(A) She puts a lot of pressure on me
(B) She gets after me frequently
(C) She urges me to do well once in awhile
(D) Lets me do as I please
(E) Doesn't care

27. How much does she want you to attend college?

(A) Won't let me go
(B) Rather that I didn't, but will let me go if I want to
(C) Doesn't care
(D) Wants me to go, but lets me decide
(E) Insists that I go

43. What language do your parents speak to each other?

(A) English all of the time
(B) English most of the time
(C) English about half of the time
(D) A language other than English most of the time
(E) A language other than English all of the time

44. What language do you use in talking to your brothers and sisters?

(A) English all of the time
(B) English most of the time
(C) English about half of the time
(D) A language other than English most of the time
(E) A language other than English all of the time

45. What language do you use in talking to your parents?

(A) English all of the time
(B) English most of the time
(C) English about half of the time
(D) A language other than English most of the time
(E) A language other than English all of the time

46. In what language are the radio programs that your parents listen to?

(A) English all of the time
(B) English most of the time
(C) English about half of the time
(D) A language other than English most of the time
(E) A language other than English all of the time

47. In what language are the radio programs that you listen to?

(A) English all of the time
(B) English most of the time
(C) English about half of the time
(D) A language other than English most of the time
(E) A language other than English all of the time

CHECK THE ANSWER CLOSEST TO YOUR FEELINGS ABOUT THE FOLLOWING QUESTIONS.

56. The most important purpose of the public schools is to prepare people for success in jobs.

(A) Strongly agree
(B) Agree
(C) Undecided
(D) Disagree
(E) Strongly disagree

57. The best way to judge a man is by his success in his job.

(A) Strongly disagree
(B) Disagree
(C) Undecided
(D) Agree
(E) Strongly agree

58. The job should come first, even if it means sacrificing time from recreation.

(A) Strongly agree
(B) Agree
(C) Undecided
(D) Disagree
(E) Strongly disagree

59. Planning only makes a person unhappy since your plans hardly ever work out anyhow.

(A) Strongly diagree
(B) Disagree
(C) Undecided
(D) Agree
(E) Strongly agree

60. When a man is born, the success he is going to have is already in the cards so he might as well accept it and not fight against it.

    (A) Strongly agree
    (B) Agree
    (C) Undecided
    (D) Disagree
    (E) Strongly disagree

61. Nowadays with world conditions the way they are the wise person lives for today and lets tomorrow take care of itself.

    (A) Strongly disagree
    (B) Disagree
    (C) Undecided
    (D) Agree
    (E) Strongly agree

62. Making plans only brings unhappiness because the plans are hard to fulfill

    (A) Strongly agree
    (B) Agree
    (C) Undecided
    (D) Disagree
    (E) Strongly disagree

63. With things as they are today an intelligent person ought to think only about the present without worrying about what is going to happen tomorrow.

    (A) Strongly disagree
    (B) Disagree
    (C) Undecided
    (D) Agree
    (E) Strongly agree

64. The secret of happiness is not expecting too much out of life and being content with what comes your way.

    (A) Strongly agree
    (B) Agree
    (C) Undecided
    (D) Disagree
    (E) Strongly disagree

65. It is important to make plans for one's life and not just accept what comes.

    (A) Strongly disagree
    (B) Disagree
    (C) Undecided
    (D) Agree
    (E) Strongly agree

STUDENT QUESTIONNAIRE

NUMBER___________

MARK THE SPACE ON THE ANSWER SHEET CORRESPONDING TO THE ANSWER THAT IS CORRECT FOR YOU FOR EACH QUESTION. MARK ONLY ONE ANSWER FOR EACH QUESTION.

SECTION 2

ONLY ANSWER THE FOLLOWING QUESTIONS IF YOU ARE NOW LIVING WITH YOUR FATHER OR STEPFATHER.

1. In general, how are most decisions made between you and your father or stepfather?

    (A) He just tells me what to do
    (B) He listens to me, but makes the decision himself
    (C) I have considerable opportunity to make my own decisions, but he has the final word
    (D) My opinions are as important as his in deciding what I should do
    (E) I can make my own decisions but he would like me to consider his opinion
    (F) I can do what I want regardless of what he thinks

2. Does he let you have more freedom to make your own decisions and to do what you want than he did two or three years ago?

    (A) Much more
    (B) A little more
    (C) About the same
    (D) A little less
    (E) Much less

3. When you don't know why he makes a particular decision or has certain rules for you to follow, will he explain the reason?

    (A) Never
    (B) Once in awhile
    (C) Sometimes
    (D) Usually
    (E) Always

4. When you don't know exactly why he is going to punish or discipline you, will he explain the reason to you?

   (A) Always
   (B) Almost always
   (C) Usually
   (D) Sometimes
   (E) Very seldom

5. How often does he discipline or punish you by reasoning with you, explaining, or talking to you?

   (A) Very often
   (B) Frequently
   (C) Once in awhile
   (D) Very seldom
   (E) Never

ONLY ANSWER THE FOLLOWING QUESTIONS IF YOU ARE NOW LIVING WITH YOUR MOTHER OR STEPMOTHER.

6. In general, how are most decisions made between you and your mother or stepmother?

   (A) She just tells me what to do
   (B) She listens to me, but makes the decision herself
   (C) I have considerable opportunity to make my own decisions, but she has the final word
   (D) My opinions are as important as her's in deciding what I should do
   (E) I can make my own decisions but she would like me to consider her opinion
   (F) I can do what I want regardless of what she thinks
   (G) She doesn't care what I do

7. Does she let you have more freedom to make your own decisions and to do what you want than she did two or three years ago?

   (A) Much more
   (B) A little more
   (C) About the same
   (D) A little less
   (E) Much less

8. When you don't know why she makes a particular decision or has certain rules for you to follow, will she explain the reason?

(A) Never
(B) Once in awhile
(C) Sometimes
(D) Usually
(E) Always

9. When you don't know exactly why she is going to punish or discipline you, will she explain the reason to you?

(A) Always
(B) Almost always
(C) Usually
(D) Sometimes
(E) Very seldom

10. How often does she discipline or punish you by reasoning with you, explaining, or talking to you?

(A) Very often
(B) Frequently
(C) Once in awhile
(D) Very seldom
(E) Never

LET'S PRETEND

23. Would you be willing to have as a relative someone whose religion is different from yours?

(A) Yes
(B) No

24. Would you be willing to have as a relative someone who was born in a different country than you were?

(A) No
(B) Yes

25. Would you be willing to have as a relative someone whose first language is different from your first language?

(A) Yes
(B) No

26. Would you be willing to have as a friend someone whose religion is different from yours?

(A) No
(B) Yes

27. Would you be willing to have as a friend someone who was born in a different country than you were?

(A) Yes
(B) No

28. Would you be willing to have as a friend someone whose first language is different from your first language?

(A) No
(B) Yes

29. Would you be willing to have as a neighbor someone whose religion is different from yours?

(A) Yes
(B) No

30. Would you be willing to have as a neighbor someone

(A) No
(B) Yes

31. Would you be willing to have as a neighbor someone whose first language is different from your first language?

(A) Yes
(B) No

35. "I feel that I just cannot learn."

(A) Never
(B) Seldom
(C) Sometimes
(D) Most of the time
(E) Always

60. How do you rate yourself in school ability compared with your close friends?

    (A) I am among the best
    (B) I am above average
    (C) I am average
    (D) I am below average
    (E) I am among the poorest

61. How do you rate yourself in school ability compared to all other people your age?

    (A) I am among the best
    (B) I am above average
    (C) I am average
    (D) I am below average
    (E) I am among the poorest

62. Do you think you have the ability to complete high school?

    (A) Yes, definitely
    (B) Yes, probably
    (C) I don't know
    (D) Probably not
    (E) Definitely not

63. Do you think you have the ability to complete college?

    (A) Yes, definitely
    (B) Yes, probably
    (C) I don't know
    (D) Probably not
    (E) Definitely not

APPENDIX B

ANALYSES OF VARIANCE ANGLO AND MEXICAN-AMERICAN STUDENTS SOCIOCULTURAL CHARACTERISTICS BY ETHNIC BACKGROUND BY SEX

TABLE B - 1

SCALE 1A: FATHER'S EDUCATION[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

STUDENTS	MALE	FEMALE	
GROUP 1 (Anglo)	5.41	4.82	5.12
GROUP 2 (Mexican-Americans using more English)	2.31	1.84	2.07
GROUP 3 (Mexican-Americans using less English)	2.19	1.27	1.73
	3.30	2.64	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	13.543	4.29*
GROUPS	2	139.149	44.03**
GROUPS x SEX	2	0.287	0.09
ERROR	120	3.160	

[a] Interpretation: 0 - no formal education, 7 - completed college.

TABLE B - II

SCALE 1A: FATHER'S EDUCATION COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	3.05	10.70**	2.80	3.70
$G_1 - G_3$	3.39	10.89**	2.95	3.86
$G_2 - G_3$	3.34	1.27	2.80	3.70

[a] $$\text{STATISTIC} = (\bar{Y}_{..i} - \bar{Y}_{..j})\sqrt{\frac{2}{c^{ii} + c^{jj} - c^{ij}}} \Big/ \sqrt{\text{M.S.}_{\text{error}}}$$

where c^{ii}, c^{jj}, and c^{ij} are elements of the inverse of the reduced least squares matrix. See Harvey, op. cit.

TABLE B - III

SCALE 1B: FATHER'S OCCUPATION[a]
SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	3.00	2.77	2.89
GROUP 2	1.37	1.35	1.36
GROUP 3	1.36	1.00	1.18
	1.91	1.71	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	1.287	0.74
GROUPS	2	35.125	20.22**
GROUPS x SEX	2	0.313	0.18
ERROR	120	1.737	

[a] Interpretation of scale: 0 - unskilled labor, 4 - professional

[b] See Table B - I for description of groups

TABLE B - IV

SCALE 1B: FATHER'S OCCUPATION
COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	1.52	7.22**	2.80	3.70
$G_1 - G_3$	1.70	7.74**	2.95	3.86
$G_2 - G_3$	0.18	0.90	2.80	3.70

[a] See footnote, Table B - II

TABLE B - V

SCALE 1C: MOTHER'S EDUCATION[a]
SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	4.58	4.27	4.43
GROUP 2	2.41	1.82	2.12
GROUP 3	1.64	1.50	1.57
	2.88	2.53	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	3.741	1.77
GROUPS	2	93.232	44.07**
GROUPS x SEX	2	0.560	0.27
ERROR	120	2.117	

[a] Interpretation: 0 - no formal education, 7 - completed college.

[b] See Table B - I for description of groups.

TABLE B - VI

SCALE 1C: MOTHER'S EDUCATION
COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE	
			.05	.01
$G_1 - G_2$	2.31	9.93**	2.80	3.70
$G_1 - G_3$	2.86	12.73**	2.95	3.86
$G_2 - G_3$	0.55	2.48	2.80	3.70

[a] See footnote, Table B - II

TABLE B - VII

SCALE 3: SELF-CONCEPT OF ABILITY[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	0.393	0.258	0.325
GROUP 2	0.098	-0.325	-0.113
GROUP 3	-0.208	-0.193	-0.200
	0.095	-0.087	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	1.016	1.43
GROUPS	2	3.207	4.52*
GROUPS x SEX	2	0.519	0.72
ERROR	120	0.709	

[a] Interpretation: positive-student feels of high ability
negative-student feels of low ability

[b] See Table B - I for description of groups

TABLE B - VIII

SCALE 3: SELF-CONCEPT OF ABILITY COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	0.438	3.25*	2.80	3.70
$G_1 - G_3$	0.525	4.03**	2.95	3.86
$G_2 - G_3$	0.087	0.68	2.80	3.70

[a] See footnote, Table B - II

TABLE B - IX

SCALE 4A: FATALISM VERSUS ACTIVISM[a]
SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	0.339	0.508	0.423
GROUP 2	-0.251	-0.074	-0.163
GROUP 3	-0.458	-0.127	-0.292
	-0.123	0.102	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	1.569	2.66
GROUPS	2	5.862	9.94**
GROUPS x SEX	2	0.090	0.15
ERROR	120	0.590	

[a] Interpretation: negative-fatalistic, present time orientation
positive-activistic, future time orientation

[b] See Table B - I for description of the groups

TABLE B - X

SCALE 4A: FATALISM VERSUS ACTIVISM
COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$		4.76**	2.80	3.70
$G_1 - G_3$		6.02**	2.95	3.86
$G_2 - G_3$		1.10	2.80	3.70

[a] See footnote, Table B - II

TABLE B - XI

SCALE 4B: OCCUPATIONAL PRIMACY[a]
MEANS

	MALES	FEMALES	
GROUP 1[b]	0.188	0.068	0.128
GROUP 2	-0.269	-0.026	-0.147
GROUP 3	0.218	0.028	0.123
	0.046	0.023	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.016	0.02
GROUPS	2	1.005	1.38
GROUPS x SEX	2	0.556	0.77
ERROR	120	0.726	

[a] Interpretation: negative-high occupational primacy attitude
positive-low occupational primacy attitude

[b] See Table B - I for descriptions of groups

TABLE B - XII

SCALE 4C: PLANNING AHEAD VERSUS PASSIVE ACCEPTANCE[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	-0.799	-0.408	-0.603
GROUP 2	0.211	0.045	0.128
GROUP 3	0.213	0.208	0.210
	-0.125	-0.052	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.164	0.29
GROUPS	2	8.035	14.22**
GROUPS x SEX	2	0.803	1.42
ERROR	120	0.565	

[a] Interpretation: negative-active,planning ahead attitude
positive-passive, non-planning attitude

[b] See Table B - I for description of the groups

TABLE B - XIII

SCALE 4C: PLANNING AHEAD VERSUS PASSIVE ACCEPTANCE COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	0.731	6.08**	2.80	3.70
$G_1 - G_3$	0.814	6.99**	2.95	3.86
$G_2 - G_3$	0.082	0.71	2.80	3.70

[a] See footnote, Table B - II

TABLE B - XIV

SCALE 4D: STRIVING ORIENTATION[a]
SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	0.229	0.332	0.280
GROUP 2	-0.019	-0.181	-0.100
GROUP 3	-0.371	-0.048	-0.210
	-0.054	0.034	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.241	0.39
GROUPS	2	2.679	4.29*
GROUPS x SEX	2	0.627	1.00
ERROR	120	0.624	

[a] Interpretation: negative-striving attitude
positive-non-striving attitude

[b] See Table B - I for descriptions of the groups

TABLE B - XV

SCALE 4D: STRIVING ORIENTATION
COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE	
			.05	.01
$G_1 - G_2$	0.380	3.01*	2.80	3.70
$G_1 - G_3$	0.490	4.01**	2.95	3.86
$G_2 - G_3$	0.110	0.91	2.80	3.70

[a] See footnote Table B - II

TABLE B - XVI

SCALE 5A: FATHER'S INDEPENDENCE TRAINING[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	3.29	3.51	3.40
GROUP 2	2.95	3.36	3.16
GROUP 3	2.27	3.55	2.91
	2.84	3.47	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	11.973	5.98*
GROUPS	2	2.516	1.26
GROUPS x SEX	2	3.467	1.73
ERROR	120	2.002	

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[a] Interpretation: 0 - non-democratic, 5 - democratic

[b] See Table B - I for descriptions of groups

TABLE B - XVI

SCALE 5B: MOTHER'S INDEPENDENCE TRAINING[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	3.65	3.95	3.80
GROUP 2	2.62	3.35	2.99
GROUP 3	2.82	3.04	2.93
	3.03	3.45	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	5.430	3.09
GROUPS	2	9.464	5.39**
GROUPS x SEX	2	0.753	0.43
ERROR	120	1.755	

[a] Interpretation: 0 - non-democratic, 5 - democratic

[b] See Table B - I for descriptions of groups

TABLE B - XVII

COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	0.812	3.83**	2.80	3.70
$G_1 - G_3$	0.871	4.25**	2.95	3.86
$G_2 - G_3$	0.059	0.29	2.80	3.70

[a] See footnote Table B - II

TABLE B - XVIII

SCALE 5C: TOTAL INDEPENDENCE TRAINING[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	6.94	7.45	7.19
GROUP 2	5.58	6.71	6.14
GROUP 3	5.09	6.58	5.84
	5.87	6.91	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	33.528	5.59*
GROUPS	2	20.663	3.44*
GROUPS x SEX	2	2.523	0.42
ERROR	120	5.995	

[a] Interpretation: 0 - non-democratic, 10 - democratic

[b] See Table B - I for descriptions of groups

TABLE B - XIX

SCALE 5C: TOTAL INDEPENDENCE TRAINING COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE	
			.05	.01
$G_1 - G_2$	1.053	2.69	2.80	3.70
$G_1 - G_3$	1.361	3.59 *	2.95	3.86
$G_2 - G_3$	0.308	0.82	2.80	3.70

[a] See footnote Table B - II

TABLE B - XX

SCALE 6A: PARENTAL PRESSURE FOR GOOD GRADES[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	-0.030	0.014	-0.008
GROUP 2	0.159	-0.215	-0.028
GROUP 3	0.088	-0.080	0.004
	0.072	-0.094	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.849	0.98
GROUPS	2	0.011	0.01
GROUPS x SEX	2	0.428	0.50
ERROR	120	0.866	

[a] Interpretation: negative - little or no pressure
positive - high parental pressure

[b] See Table B - I for descriptions of groups

TABLE B - XXI

SCALE 6B: AMOUNT OF PARENTAL HELP WITH SCHOOLWORK[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	-0.080	0.230	0.075
GROUP 2	0.255	0.022	0.139
Group 3	-0.153	-0.285	-0.219
	0.072	-0.011	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.010	0.02
GROUPS	2	1.580	2.39
GROUPS x SEX	2	0.821	1.24
ERROR	120	0.661	

[a] Interpretation: negative - little help with schoolwork
positive - parents help when asked

[b] See Table B - I for descriptions of groups

TABLE B - XXII

SCALE 6C: PARENT'S DESIRE THAT STUDENT GO TO COLLEGE[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	-0.471	-0.015	-0.243
GROUP 2	-0.249	0.148	-0.050
GROUP 3	0.094	0.401	0.247
	-0.209	0.178	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	4.612	5.74•
GROUPS	2	2.585	3.22•
GROUPS x SEX	2	0.060	0.08
ERROR	120	0.803	

[a] Interpretation: negative - parents want student to go to college
positive - parents do not want student to go to college

[b] See Table B - I for descriptions of groups

TABLE B - XXIII

SCALE 6C: PARENT'S DESIRE THAT STUDENT GO TO COLLEGE COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	0.193	1.35	2.80	3.70
$G_1 - G_3$	0.490	3.54•	2.95	3.86
$G_2 -- G_3$	0.297	2.17	2.80	3.70

[a] See footnote, Table B - II

TABLE B - XXIV

SCALE 6D: PARENTAL PRESSURE TO COMPLETE HIGH SCHOOL[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	-0.126	0.023	-0.051
GROUP 2	-0.342	-0.201	-0.272
GROUP 3	0.414	0.113	0.264
	-0.018	-0.022	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.000	0.00
GROUPS	2	3.111	4.83**
GROUPS x SEX	2	0.719	1.11
ERROR	120	0.645	

[a] Interpretation: negative - parents want student to complete high school
positive - parents do not want student to complete high school

[b] See Table B - I for descriptions of groups

TABLE B - XXV

SCALE 6D: PARENTAL PRESSURE TO COMPLETE HIGH SCHOOL COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE	
			.05	.01
$G_1 - G_2$	0.221	1.72	2.80	3.70
$G_1 - G_3$	0.314	2.53	2.80	3.70
$G_2 - G_3$	0.535	4.35**	2.95	3.86

[a] See footnote, Table B - II

TABLE B - XXVI

SCALE 7A: RELIGIOUS SOCIAL DISTANCE[a]
SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	0.353	0.136	0.245
GROUP 2	0.667	0.765	0.716
GROUP 3	0.500	0.875	0.688
	0.507	0.592	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.225	0.43
GROUPS	2	2.763	5.26**
GROUPS x SEX	2	0.914	1.74
ERROR	120	0.525	

[a] Interpretation: 0 - would permit close social relations
2 - would not permit close social relations

[b] See Table B - III for descriptions of groups

TABLE B - XXVII

SCALE 7A: RELIGIOUS SOCIAL DISTANCE
COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	0.471	4.06**	2.95	3.86
$G_1 - G_3$	0.443	3.95**	2.80	3.70
$G_2 - G_3$	0.028	0.25	2.80	3.70

[a] See footnote, Table B - II

TABLE B - XXVIII

SCALE 7B: NATIONALITY SOCIAL DISTANCE[a]
SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	0.177	0.045	0.110
GROUP 2	0.333	0.176	0.255
GROUP 3	0.409	0.292	0.350
	0.306	0.171	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.563	2.29
GROUPS	2	0.601	2.45
GROUPS x SEX	2	0.004	0.01
ERROR	120	0.246	

---

[a] Interpreted: 0 - Would permit close social relations
2 - would not permit close social relations

[b] See Table B - I for descriptions of groups

TABLE B - XXIX

SCALE 7C: LANGUAGE SOCIAL DISTANCE[a] SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	0.235	0.364	0.300
GROUP 2	0.667	0.471	0.569
GROUP 3	0.682	0.458	0.570
	0.528	0.431	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.291	0.60
GROUPS	2	0.966	1.98
GROUPS x SEX	2	0.383	0.79
ERROR	120	0.487	

[a] Interpretation: 0 - would permit close social relations
2 - would not permit close social relations

[b] See Table B - I for descriptions of groups

TABLE B - XXX
NUMBER OF STUDENTS IN EACH SUBCLASS

	MALE	FEMALE	
GROUP 1	17	22	39
GROUP 2	24	17	41
GROUP 3	22	24	46
	63	63	

APPENDIX C

ANALYSES OF VARIANCE ANGLO AND MEXICAN-AMERICAN STUDENTS ACHIEVEMENT MEASURES BY ETHNIC BACKGROUND BY SEX

TABLE C - I

ENGLISH GRADES, SUBCLASS MEANS AND ANALYSIS OF VARIANCE[a]

	MALE	FEMALE	
GROUP 1 (Anglo)	2.41 (17)[b]	2.73 (22)	2.57
GROUP 2 (Mexican-Americans using more English)	2.08 (24)	2.29 (17)	2.19
GROUP 3 (Mexican-Americans using less English)	1.91 (22)	2.42 (24)	2.16
	2.13	2.48	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	3.662	5.26*
GROUPS	2	2.071	2.98
GROUPS x SEX	2	0.245	0.35
ERROR	120	0.696	

[a] Interpretation 4 - A, 3 - B, 2 - C, 1 - D, 0 - F.

[b] Number of observations in subclass.

TABLE C - II

MATHEMATICS GRADES, SUBCLASS MEANS AND ANALYSIS OF VARIANCE[a]

	MALE	FEMALE	
GROUP 1[b]	2.71 (17)[c]	2.36 (22)	2.53
GROUP 2	2.12 (24)	2.24 (17)	2.18
GROUP 3	2.09 (22)	2.17 (24)	2.13
	2.31	2.25	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	0.084	0.12
GROUPS	2	1.963	2.82
GROUPS x SEX	2	0.627	0.90
ERROR	120	0.695	

[a] Interpretation: 4 - A, 3 - B, 2 - C, 1 - D, 0 - F.

[b] See Table C - I for descriptions of the groups.

[c] Number of observations in subclass.

TABLE C - III

IOWA - LANGUAGE SKILLS SCORE, SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	53.93 (13)[b]	53.80 (17)	53.87
GROUP 2	49.52 (15)	54.29 (10)	51.91
GROUP 3	42.47 (15)	50.03 (19)	46.25
	48.64	52.71	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	352.43	2.72
GROUPS	2	493.40	3.81*
GROUPS x SEX	2	117.30	0.91
ERROR	120	129.35	

[a] See Table C - I for descriptions of the groups.

[b] Number of observations in subclass.

TABLE C - IV

IOWA - LANGUAGE SKILLS SCORE, COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC	D.M.R.S. CRITICAL VALUE .05	.01
$G_1 - G_2$	1.96	0.89	2.83	3.76
$G_1 - G_3$	7.62	3.75*	2.98	3.92
$G_2 - G_3$	5.66	2.63	2.83	3.76

[a] $$\text{STATISTIC} = (\bar{Y}_{..i} - \bar{Y}_{..j}) \sqrt{\frac{2}{c^{ii} + c^{jj} - c^{ij}}} \Big/ \sqrt{\text{M.S.error}}$$

Where c^{ii}, c^{jj}, and c^{ij} are elements of the inverse of the reduced least squares matrix. See Harvey, *op. cit.*

TABLE C - V

IOWA ARITHMETIC SKILLS SCORE, SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[b]	52.25 (13)[b]	45.38 (17)	48.81
GROUP 2	42.28 (15)	40.42 (10)	41.35
GROUP 3	35.66 (15)	36.99 (19)	36.32
	43.40	40.93	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	130.00	1.17
GROUPS	2	1228.55	11.08**
GROUPS x SEX	2	132.78	1.20
ERROR	83	110.86	

[a] See Table C - I for descriptions of the groups.

[b] Number of observations in subclass.

TABLE C - VI

IOWA ARITHMETIC SKILLS SCORE, COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE	
			.05	.01
$G_1 - G_2$	7.46	3.64*	2.83	3.76
$G_1 - G_3$	12.49	6.64**	2.98	3.92
$G_2 - G_3$	5.03	2.53	2.83	3.76

[a] See footnote, Table C - IV.

TABLE C - VII

NON-LANGUAGE INTELLIGENCE SCORE, SUBCLASS MEANS AND ANALYSIS OF VARIANCE

	MALE	FEMALE	
GROUP 1[a]	118.92 (13)[b]	111.18 (17)	115.05
GROUP 2	104.47 (15)	105.10 (10)	104.78
GROUP 3	94.00 (15)	95.89 (19)	94.95
	105.80	104.06	

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
SEX	1	64.58	0.20
GROUPS	2	3170.54	10.04**
GROUPS X SEX	2	205.16	0.65
ERROR	83	316.00	

[a] See Table C - I for descriptions of the groups.

[b] Number of observation in subclass.

TABLE C - VIII

NON-LANGUAGE INTELLIGENCE SCORE, COMPARISONS USING DUNCAN'S MULTIPLE RANGE STATISTIC

COMPARISON	DIFFERENCE	STATISTIC[a]	D.M.R.S. CRITICAL VALUE .05	D.M.R.S. CRITICAL VALUE .01
$G_1 - G_2$	10.27	2.97*	2.83	3.76
$G_1 - G_3$	20.10	6.33**	2.98	3.92
$G_2 - G_3$	9.84	2.93*	2.83	3.76

[a] See footnote, Table C - IV.

APPENDIX D

REGRESSION ANALYSES PREDICTING ANGLO AND MEXICAN-AMERICAN STUDENTS' ACHIEVEMENT MEASURES

TABLE D - I

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT MEXICAN-AMERICAN STUDENTS' ENGLISH GRADES

MULTIPLE CORRELATION COEFFICIENT = 0.500
PERCENT OF VARIANCE ACCOUNTED FOR = 25.0

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
SEX (0=M, 1=F)	0.200	0.101
Scale 3: Self-Concept of Ability	0.334	0.098
Scale 4C: Planning Ahead versus Passive Acceptance	-0.164	0.096
Scale 5C: Total Independence Training	0.243	0.101
Scale 7C: Language Social Distance	0.144	0.100

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	410.60	
REGRESSION	5	3.23	5.41**
ERROR	81	0.60	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE D - II

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT MEXICAN-AMERICAN STUDENTS' MATHEMATICS GRADES

Multiple Correlation Coefficient = 0.513
Percent of Variance Accounted for = 26.3

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 3: Self-Concept of Ability	0.330	0.097
Scale 4B: Occupational Primacy	0.244	0.100
Scale 5C: Total Independence Training	0.232	0.098
Scale 6D: Parental Pressure to complete High School	-0.151	0.099
Scale 7A: Religious Social Distance	-0.134	0.098

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	401.940	
REGRESSION	5	2.998	5.77**
ERROR	81	0.519	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE D - III

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT ENGLISH GRADES OF ANGLO STUDENTS

Multiple Correlation Coefficient = 0.755
Percent of Variance Accounted for = 57.0

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
SEX (0=M, 1=F)	0.322	0.138
Scale 3: Self-Concept of Ability	0.271	0.148
Scale 4B: Occupational Primacy	0.250	0.126
Scale 4C: Planning Ahead versus Passive Acceptance	0.212	0.139
Scale 6C: Parents' Desire that Student go to College	-0.426	0.137
Scale 6D: Parental Pressure to Complete High School	-0.234	0.126
Scale 7A: Religious Social Distance	-0.196	0.137

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	261.560	
REGRESSION	7	1.909	5.87**
ERROR	31	0.325	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE B - IV

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT ANGLO STUDENTS' MATHEMATICS GRADES

Multiple Correlation Coefficient = 0.615
Percent of Variance Accounted for = 37.9

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 3: Self-Concept of Ability	0.473	0.142
Scale 5C: Total Independence Training	-0.231	0.149
Scale 6A: Parental Pressure to Get Good Grades	-0.282	0.137
Scale 6D: Parental Pressure to Complete High School	-0.350	0.143

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	246.250	
REGRESSION	4	2.626	5.18**
ERROR	34	0.507	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE D - V

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT MEXICAN-STUDENTS' TOTAL LANGUAGE ACHIEVEMENT TEST SCORES

Multiple Correlation Coefficient = 0.555
Percent of Variance Accounted for = 30.8

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 3: Self-Concept of Ability	0.380	0.106
Scale 5C: Total Independence Training	0.370	0.107
Scale 6A: Parental Pressure to Get Good Grades	-0.148	0.106
Scale 6B: Amount of Parental Help with Schoolwork	-0.177	0.107
Scale 6D: Parental Pressure to Complete High School	-0.145	0.105

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	166080.00	
REGRESSION	5	543.08	5.69**
ERROR	64	95.39	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE D - VI

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT MEXICAN-AMERICAN STUDENTS' TOTAL ARITHMETIC ACHIEVEMENT TEST SCORES

Multiple Correlation Coefficient = 0.576
Percent of Variance Accounted for = 33.0

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 3: Self-Concept of Ability	0.457	0.102
Scale 4B: Occupational Primacy	0.147	0.104
Scale 5C: Total Independence Training	0.234	0.104
Scale 7A: Religious Social Distance	-0.165	0.104

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	102790.00	
REGRESSION	4	522.93	8.05**
ERROR	65	64.94	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE D - VII

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT ANGLO STUDENTS' TOTAL LANGUAGE ACHIEVEMENT TEST SCORES

Multiple Correlation Coefficient = 0.548
Percent of Variance Accounted for = 30.0

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 3: Self-Concept of Ability	0.548	0.150

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	95992.00	
REGRESSION	1	1040.00	13.28**
ERROR	31	78.33	

[a] Partial F-value to enter variables = 1.60
Partial F-value to remove variables = 1.50

TABLE D - VIII

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT ANGLO STUDENTS TOTAL ARITHMETIC ACHIEVEMENT TEST SCORES

Multiple Correlation Coefficient = 0.782
Percent of Variance Accounted for = 61.1

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 3: Self-Concept of Ability	0.394	0.147
Scale 4C: Planning Ahead versus Passive Acceptance	-0.400	0.164
Scale 4D: Striving Orientation	0.542	0.182
Scale 6A: Parental Pressure to Get Good Grades	-0.646	0.170
Scale 6B: Amount of Parental Help with Schoolwork	0.338	0.129
Scale 6C: Parents Desire that Student go to College	-0.290	0.131

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	76392.00	
REGRESSION	6	427.93	6.82**
ERROR	26	62.75	

[a] Partial F-value to enter variables=1.72
Partial F-value to remove variables=1.50

TABLE B - IX

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT MEXICAN-AMERICAN STUDENTS' NONLANGUAGE IQ SCORES

Multiple Correlation Coefficient = 0.535
Percent of Variance Accounted for = 28.6

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
Scale 4A: Fatalism versus Activism	0.149	0.107
Scale 5C: Total Independence Training	0.151	0.113
Scale 6B: Amount of Parental Help with Homework	0.199	0.108
Scale 6D: Parental Pressure to Complete High School	-0.308	0.110
Scale 7A: Religious Social Distance	-0.188	0.111
Scale 7B: Nationality Social Distance	-0.190	0.123
Scale 7C: Language Social Distance	0.255	0.123

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	732610.00	
REGRESSION	7	939.40	3.78**
ERROR	66	248.61	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

TABLE D - X

RESULTS OF STEPWISE MULTIPLE LINEAR REGRESSION ANALYSIS CALCULATED TO PREDICT ANGLO STUDENTS' NONLANGUAGE IQ SCORES

Multiple Correlation Coefficient = 0.688
Percent of Variance Accounted for = 47.3

VARIABLES ENTERED[a]	BETA WEIGHT	STANDARD ERROR OF BETA WEIGHT
SEX (0=M, 1=F)	-0.273	0.148
Scale 3: Self-Concept of Ability	0.404	0.155
Scale 4A: Fatalism versus Activism	0.196	0.138
Scale 4C: Planning Ahead versus Passive Acceptance	0.237	0.154
Scale 7B: Nationality Social Distance	-0.407	0.143

ANALYSIS OF VARIANCE

SOURCE OF VARIANCE	D.F.	MEAN SQUARE	F - RATIO
MEAN	1	464890.00	
REGRESSION	5	799.05	5.38**
ERROR	30	148.43	

[a] Partial F-value to enter variables = 1.72
Partial F-value to remove variables = 1.50

APPENDIX E

INTERCORRELATION MATRICES

TABLE E - I

INTERCORRELATION MATRIX OF VARIABLES USED IN REGRESSION
ANALYSES PREDICTING MEXICAN-AMERICAN STUDENTS'
ENGLISH AND MATHEMATICS GRADES

N = 87

	Sex	2	3	4A	4B	4C	4D	5C	6A	6B	6C	6D	7A	7B	7C	ENGLISH GRADES	MATHEMATICS GRADES
Sex	1.000	-0.128	-0.116	0.165	0.025	-0.049	0.056	0.260	-0.141	-0.136	0.191	-0.020	0.153	-0.113	-0.143	0.212	0.053
2		1.000	0.085	-0.019	-0.097	-0.098	0.024	0.098	0.023	0.361	-0.175	-0.267	-0.148	-0.039	-0.039	-0.041	0.083
3			1.000	0.190	-0.116	-0.039	0.051	0.058	0.250	0.010	-0.260	-0.017	-0.114	0.056	-0.126	0.313	0.333
4A				1.000	-0.013	0.123	0.066	0.199	-0.106	-0.078	-0.030	-0.011	-0.079	0.098	-0.098	0.162	0.204
4B					1.000	-0.023	-0.004	-0.034	-0.180	0.057	0.063	0.270	-0.055	0.326	0.118	-0.039	0.164
4C						1.000	-0.062	0.009	0.003	0.019	-0.030	0.094	-0.043	-0.035	0.001	-0.185	-0.104
4D							1.000	0.124	-0.085	-0.001	-0.005	-0.071	-0.183	-0.197	-0.290	0.062	0.084
5C								1.000	0.117	0.176	-0.072	-0.058	-0.201	-0.116	-0.200	0.285	0.279
6A									1.000	-0.010	-0.097	0.015	-0.074	0.112	-0.021	0.067	0.097
6B										1.000	-0.075	-0.015	-0.071	-0.002	-0.029	0.070	-0.038
6C											1.000	-0.025	0.087	-0.233	-0.245	-0.104	0.002
6D												1.000	0.029	0.270	0.156	-0.106	-0.109
7A													1.000	0.239	0.275	0.059	-0.236
7B														1.000	0.436	0.081	-0.001
7C															1.000	0.025	-0.163

TABLE E - II

INTERCORRELATION MATRIX OF VARIABLES USED IN REGRESSION ANALYSES PREDICTING ANGLO STUDENTS' ENGLISH AND MATHEMATICS GRADES

N = 39

	Sex	3	4A	4B	4C	4D	5C	6A	6B	6C	6D	7A	7B	7C	ENGL	MATH
Sex	1.000	-0.088	0.104	-0.067	0.251	0.062	0.105	0.025	0.179	0.336	0.126	-0.203	-0.214	0.113	0.202	-0.201
3		1.000	0.069	-0.087	-0.424	-0.331	0.309	-0.045	0.119	-0.213	-0.094	-0.409	-0.230	-0.244	0.324	0.447
4A			1.000	-0.097	-0.093	-0.345	0.358	-0.262	-0.056	0.006	0.022	-0.199	-0.160	-0.148	0.106	0.007
4B				1.000	0.132	-0.027	0.180	-0.155	0.124	0.128	0.159	-0.135	0.084	0.071	0.165	-0.188
4C					1.000	0.360	-0.127	-0.177	0.069	-0.018	-0.034	0.104	0.018	0.090	0.205	-0.160
4D						1.000	-0.123	0.499	0.042	0.096	-0.303	0.143	0.105	0.093	0.024	-0.089
5C							1.000	-0.085	0.298	-0.024	-0.296	-0.302	-0.346	-0.259	0.323	0.042
6A								1.000	0.115	0.155	-0.087	-0.019	0.042	0.027	-0.208	-0.253
6B									1.000	0.199	-0.153	-0.051	-0.111	-0.033	0.044	-0.109
6C										1.000	0.314	0.023	0.314	0.300	-0.425	-0.189
6D											1.000	0.002	-0.177	0.070	-0.318	-0.302
7A												1.000	0.491	0.365	-0.394	-0.035
7B													1.000	0.718	-0.257	0.095
7C														1.000	-0.181	-0.171

TABLE 6-III

INTERCORRELATION MATRIX OF VARIABLES USED IN REGRESSION ANALYSES PREDICTING MEXICAN-AMERICAN STUDENTS' LANGUAGE AND ARITHMETIC ACHIEVEMENT TEST SCORES

N = 70

	Sex	2	3	4A	4B	4C	4D	5C	6A	6B	6C	6D	7A	7B	7C	LANGUAGE SCORES	ARITHMETIC SCORES
Sex	1.000	-0.220	-0.071	0.135	0.074	0.015	0.050	0.326	-0.120	-0.183	0.124	0.024	0.161	-0.138	-0.154	0.233	-0.019
2		1.000	0.130	0.064	0.025	-0.111	0.046	0.079	0.025	0.364	-0.281	-0.232	-0.164	0.130	-0.054	0.102	0.235
3			1.000	0.257	-0.086	-0.052	0.080	-0.011	0.178	0.026	-0.275	-0.028	-0.017	0.104	-0.084	0.348	0.445
4A				1.000	0.047	0.051	0.059	0.208	-0.157	-0.048	-0.009	-0.016	-0.129	0.071	-0.089	0.216	0.235
4B					1.000	0.052	0.163	0.128	-0.132	0.121	0.116	0.054	-0.171	0.120	-0.014	-0.114	0.163
4C						1.000	-0.028	-0.005	0.004	-0.048	0.058	0.100	-0.028	-0.071	0.000	-0.142	-0.121
4D							1.000	0.219	-0.129	0.063	-0.021	-0.007	-0.196	-0.128	-0.261	0.056	0.144
5C								1.000	0.061	0.211	-0.039	-0.041	-0.173	-0.036	-0.159	0.326	0.276
6A									1.000	0.001	-0.102	0.044	0.168	0.197	0.044	-0.064	0.003
6B										1.000	-0.088	0.074	-0.133	-0.004	-0.011	-0.100	0.013
6C											1.000	0.063	0.114	-0.234	-0.328	-0.117	-0.156
6D												1.000	0.007	0.132	0.048	-0.191	-0.052
7A													1.000	0.183	0.255	0.010	-0.238
7B														1.000	0.423	0.035	0.015
7C															1.000	-0.037	-0.040

TABLE E - IV

INTERCORRELATION MATRIX OF VARIABLES USED IN REGRESSION
ANALYSES PREDICTING ANGLO STUDENTS LANGUAGE AND
ARITHMETIC ACHIEVEMENT TEST SCORES

N = 33

	Sex	3	4A	4B	4C	4D	5C	6A	6B	6C	6D	7A	7B	7C	LANGUAGE SCORES	MATHEMATIC SCORES
Sex	1.000	-0.080	0.211	-0.059	0.248	0.067	0.142	0.020	0.026	0.301	0.095	-0.206	-0.220	0.104	0.012	-0.249
3		1.000	0.084	-0.015	-0.409	-0.354	0.298	-0.027	0.179	-0.234	-0.067	-0.464	-0.265	-0.254	0.548	0.511
4A			1.000	0.010	-0.097	-0.406	0.536	-0.445	0.014	0.029	-0.103	-0.271	-0.215	-0.285	0.225	0.240
4B				1.000	0.108	-0.029	0.245	-0.061	0.129	0.262	0.185	-0.135	0.126	0.088	-0.014	0.036
4C					1.000	0.393	-0.142	-0.215	-0.022	-0.036	-0.092	0.185	0.074	0.105	-0.096	-0.206
4D						1.000	-0.153	0.516	0.036	0.115	-0.314	0.148	0.108	0.111	-0.087	-0.110
5C							1.000	-0.061	0.359	0.001	-0.219	-0.303	-0.353	-0.193	0.182	0.346
6A								1.000	0.131	0.147	-0.136	-0.024	0.042	-0.004	-0.132	-0.290
6B									1.000	0.175	-0.260	-0.013	-0.090	-0.059	0.118	0.301
6C										1.000	0.325	0.028	0.332	0.305	-0.156	-0.341
6D											1.000	0.001	-0.195	-0.034	-0.104	-0.348
7A												1.000	0.478	0.366	-0.395	-0.249
7B													1.000	0.739	-0.212	-0.150
7C														1.000	-0.225	-0.223

TABLE E - V

INTERCORRELATION MATRIX OF VARIABLES USED IN REGRESSION ANALYSES PREDICTING MEXICAN-AMERICAN STUDENTS' NONLANGUAGE IQ TEST SCORES

N = 74

	Sex	2	3	4A	4B	4C	4D	5C	6A	6B	6C	6D	7A	7B	7C	IQ
Sex	1.000	-0.024	-0.058	0.101	-0.007	-0.013	0.056	0.251	-0.193	-0.107	0.148	-0.046	0.073	-0.170	-0.182	-0.005
2		1.000	0.075	0.062	-0.078	-0.154	0.063	0.191	0.101	0.376	-0.142	-0.263	-0.078	-0.044	-0.030	0.240
3			1.000	0.218	-0.076	-0.163	0.071	0.084	0.255	0.016	-0.263	-0.010	-0.046	0.106	-0.080	0.126
4A				1.000	-0.033	0.139	0.042	0.179	-0.164	-0.002	-0.104	-0.045	-0.145	0.038	-0.071	0.191
4B					1.000	0.041	-0.014	-0.067	-0.208	0.106	0.054	0.274	-0.129	0.304	0.090	-0.017
4C						1.000	-0.058	0.022	0.030	0.000	-0.011	0.108	0.008	-0.016	0.104	0.204
4D							1.000	0.110	-0.069	0.026	-0.015	-0.077	-0.171	-0.213	-0.316	0.053
5C								1.000	0.154	0.216	-0.123	-0.106	-0.215	-0.108	-0.220	0.265
6A									1.000	0.028	-0.107	0.009	0.022	0.090	-0.031	-0.039
6B										1.000	-0.014	0.011	-0.065	0.059	-0.105	0.202
6C											1.000	-0.060	0.041	-0.291	-0.253	-0.080
6D												1.000	-0.001	0.280	0.213	-0.327
7A													1.000	0.177	0.224	-0.232
7B														1.000	0.472	-0.188
7C															1.000	-0.011

TABLE 8-VI

INTERCORRELATION MATRIX OF VARIABLES USED IN REGRESSION ANALYSIS PREDICTING ANGLO STUDENTS' NONLANGUAGE IQ TEST SCORES

N = 36

	Sex	3	4A	4B	4C	4D	5C	6A	6B	6C	6D	7A	7B	7C	IQ
Sex	1.000	-0.257	0.134	-0.058	0.306	0.098	0.102	0.007	0.254	0.430	0.116	-0.118	-0.200	0.273	-0.196
3		1.000	0.118	-0.097	-0.456	-0.333	0.316	-0.087	0.190	-0.252	-0.128	-0.329	-0.225	-0.251	0.481
4A			1.000	-0.082	-0.118	-0.357	0.349	-0.251	-0.101	0.025	0.010	-0.229	-0.199	-0.121	0.260
4B				1.000	0.131	-0.035	0.199	-0.164	0.129	0.089	0.188	-0.169	-0.013	0.009	0.120
4C					1.000	0.355	-0.171	-0.167	0.007	-0.045	-0.040	0.078	0.050	0.210	-0.074
4D						1.000	-0.123	0.509	0.024	0.074	-0.299	0.113	0.083	0.084	-0.051
5C							1.000	-0.073	0.254	0.002	-0.343	-0.299	-0.373	-0.131	0.296
6A								1.000	0.148	0.148	-0.078	-0.009	-0.009	-0.038	-0.123
6B									1.000	0.202	-0.180	-0.104	-0.117	0.131	0.084
6C										1.000	0.399	-0.062	0.062	0.171	-0.174
6D											1.000	0.037	-0.092	0.268	-0.164
7A												1.000	0.590	0.358	-0.436
7B													1.000	0.344	-0.470
7C														1.000	-0.382